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A Lecture ON THE EPILEPSIES.*

BY

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THE condition commonly called epilepsy, a "disease" characterized by fits, is familiar to every practitioner of medicine and to many a passer-by in the street; it has formed the topic of innumerable dissertations through the centuries, and has been claimed as a therapeutic preserve by each successive variety of healer, from the divine to the psycho-analytic. As has been the case with other common nervous ailments, from time to time there has been a kind of spurt in the race for a panacea, followed only too often by a reaction after the effort; and to-day various rival and mutually contradictory methods for dealing with it are being advocated, the efficacy of no one of which can be confidently and constantly relied on.

To obtain that definiteness of treatment which must always be his goal, the physician must know the nature and etiology of the morbid condition with which he is dealing and the mechanism of production of its symptoms. Now it so happens that while the external manifestation of an ordinary epileptic fit is apparent to everyone, its inward or neural genesis and progression offer problems of great difficulty and complexity, on which the outward phenomena at the best throw but an imperfect light; from them we are compelled to infer a mode of physiological activity our theories of which are largely speculative, while the symptoms themselves are essentially so transient that the opportunity for objective study is very often too brief to be adequately seized. Like some other nervous affections, in fact, epilepsy is a condition superficially easy of diagnosis but etiologically and pathogenically obscure, and wide excursions in neurophysiology and experimental neuropathology have to be taken to gather such relatively meagre data as are at our disposal in this connexion. Forestalling for the moment what may subsequently be alluded to more fully, I may now state that even if a psychogenic origin be assumed, or proved, for one or other of the epilepsies, the physiological problem presented by the clinical symptoms of the fit is thereby left entirely untouched. To say that a given fit is psychogenic provides no solution; in the words of Hughlings Jackson, "all psychological explanations of physical inabilities are merely verbal," and, as anyone can see, a fit in the ordinary sense is a physical thing.

I propose in this lecture to discuss some of the general and physiological questions connected with epilepsy. Our first is concerned with nomenclature and definition.

What is Epilepsy?

In ordinary parlance, as sanctioned by long usage, epilepsy is understood to be a disease the outstanding symptom of which is the occasional fit. One has only to mention this conception to realize forthwith its thoroughly unsatisfactory nature. There are many nervous states of organic origin in which epileptic fits are a symptom; on the other hand, the conception is vitiated by the admission into the category of epilepsy of conditions characterized by "attacks" of a class quite different from the fit as usually understood, but supposedly "equivalent" to epileptic fits because of their recurrence, transient nature, the patient's subsequent conscious ignorance of what takes place during them, and so on. The epileptic fit is nothing else than a symptom; no such *disease* as epilepsy exists, or can possibly exist; even by resort to such epithets as "essential" or "idiopathic" epilepsy we in no sense add a term of differentiating quality, since the pathological element constituting the disease-component (whatever it may be) is not thereby expressed. Further, assuming that a person who suffers from fits is the subject of a disease which may as well be called epilepsy as anything else, we are unable to say where such a diseased state begins and ends. As is known to every clinician, an individual may have one fit only in the course of his life, or a few, at the widest intervals, as in the case of a lady who had an epileptic fit at the age of 14, when her period of reproductive activity commenced, and another at 44, when it closed. To dub such cases epileptic in the accepted and always somewhat grave sense is clearly unwarranted, but the nature of the attacks shows that they cannot be called by any other name if the term is to retain any descriptive value. Other individuals exhibit at the outset attacks justifiably regarded by the clinical observer as faints, which subsequently merge by ill recognized degrees into the epileptic category. And it is scarcely necessary to point out that ordinary major epileptic fits are often for a time the sole discoverable indication that a serious organic diseased cerebral state is developing—vascular, inflammatory, toxic, or neoplastic.

Nor is the problem of delimitation easier in respect of the clinical varieties commonly called Jacksonian or epileptiform, and minor, or *le petit mal*. By objective observation on a single occasion of the outward characters of a series of muscular twitches it is practically impossible in many instances to say if they belong to the category of incipient Jacksonian epilepsy, or are rightly described as myoclonus or paramyoclonus, or as tic; additional data not concerned with the extrinsic features of the muscular contractions are often requisite for an exact diagnosis. Most of us have in recent years become familiar with curious varieties of tonico-clonic "involuntary" movements as a sequel to epidemic encephalitis which some Continental observers are already describing as "striatal epilepsy," as though (vain hope!) the solution of their pathogenesis were thereby facilitated; and many practitioners must know of cases classed by them as petit mal in which they have never been sure whether the clinical appearances really justified that terminology.

The truth is, as it seems to me, that we have been content to classify fits by certain extrinsic characters or qualities mainly because of our relative ignorance of the intrinsic features of the disorder of neural function which exteriorizes itself as a fit.

What Constitutes a Fit?

When we come to examine the connotation of the word "fit" we find ourselves in no less a quandary than in regard to the term "epilepsy," for in the ordinary acceptation of that useful expression it stands for conditions as

* The Annual Harveian Lecture delivered before the Harveian Society of London on April 22nd, 1925.

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frontal lobes can be confidently diagnosed; indeed, unless we accept turning of the head and eyes as a frontal symptom (which experimental evidence suggests it may be), no other positive symptom of an ordinary epileptic seizure can be said to have a frontal localization by itself, certainly not the loss of consciousness. It is true that various clinical and pathological data may be taken to indicate (as was discussed at some length in my Croonian Lectures[2]) that a large part of the brain in front of the precentral gyri subserves motor functions; but any motor phenomena its excitation might conceivably produce (with the exception of the not constant head and eyes movement already alluded to) are possibly at once submerged by the spread of the physiological process to the middle level centres. (This point is also referred to below under the heading of "Type of Movement.")

As far as the familiar motor area of the Rolandic cortex is concerned, from the physiological standpoint it is electrically excitable, and from the anatomical it contains the Betz cells, which are the origins of the pyramidal or cortico-spinal tracts running to the ventral horn motor cells of the spinal cord. These cortico-spinal paths are the chief available routes for cortically initiated movements to exteriorize themselves via the spino-muscular units, and in the case of the movements of Jacksonian epilepsy this is definitely the kinetic route taken. When, therefore, the limbs and trunk are convulsed in a severe fit, the idea is that simultaneous powerful discharge of whole groups of motor cells in the bilateral Rolandic areas is taking place, the result being at first an absolute contention of movement, resulting in relative muscular rigidity—tetanic contractions strictly comparable to that obtained by faradic stimulation of a cortical motor point as long as the stimulus is kept up.

The question arises, however, whether the motor phenomena of a general epileptic fit may not be produced at other levels than the cortical. I have already said that a "discharging lesion," if of sufficient intensity, will scarcely confine itself to one physiological level, but will rapidly implicate others; hence discharges may conceivably be taking place, in this instance, at the spinal level. It is recognized, further, that epileptic fits can be produced experimentally in decerebrate animals in which the brain stem has been transected and (*inter alia*) the cortical motor areas and pyramidal tracts put completely out of action. When only the pons, medulla, and cord are experimentally left, fits are still produceable, and convulsions may in these circumstances develop *sub finem* just as the respiratory centres are failing. Of course, they are possible only because the spino-muscular units are still living, to be convulsed, but the anatomical paths from medulla to ventral horn cells, traversed by the excitations, are not with certainty known. So far as I am aware, strictly spinal epilepsy—that is, in the purely spinal animal—has not been found experimentally, though there is no theoretical impossibility of its occurrence. In view of these facts and others which are germane but cannot here be detailed, it has been several times suggested, in recent years, that the phenomena under discussion are the result not so much of excitation spreading from higher to lower levels as of removal of inhibition from higher to lower levels, and that the symptoms of the seizure—that is, the motor symptoms—are produced by release of function; that the epileptic process inhibits controlling centres (say, cortical centres), and that "lower" centres are "let go." Hughlings Jackson himself fully realized this possibility; in his Lumleian Lectures[1] he referred to various "inhibition hypotheses," on which, however, he expressed no decided opinion. It is clear, I think, however, that he was so convinced of the far greater complexity of movement representation in the cerebral cortex that he could not accept the possibility of discharges at low levels being comparable to those of high levels; in his own words:

> "it would be marvellous if excessive discharges beginning in centres lowest in rank produced fits like those . . . which are produced by excessive discharges beginning in parts of the more evolved centres, the middle motor cerebral centres. . . ."

The problem is one calling for contemplation from every angle, otherwise we are in danger of reaching a rash conclusion through neglect of the complexity of the factors. Due attention should be given to the following considerations.

1. While it is agreed that fits of a general kind can be produced in the decerebrate animal, Cobb and Uyematsu[3] have shown that a much larger dose of a convulsive agent (absinthe, thujone) is required to cause a convulsion in these circumstances than for a similar convulsion in an intact animal, in which the cortex is active, and they conclude that the cortical motor cells are those most easily and readily stimulated by these convulsants. Pike and Elsberg[4] also admit the greater susceptibility of the uninjured cortex to experimental absinthe fits, although their investigations demonstrated the possibility of the occurrence of both tonic and clonic convulsions in animals deprived of both motor cortical areas, provided an interval sufficient for the return of "good locomotor reactions" was allowed to elapse after the initial operation. These fits "did not differ essentially from absinthe convulsions that occur in unoperated animals"; and, according to Cobb and Macdonald,[5] "the march of events during a convulsion produced by thujone is very similar to that seen during an epileptic fit." Data of this kind, valuable as they must be acknowledged to be, do little more than substantiate the view already outlined, that in appropriate circumstances healthy neural mechanisms below the level of the cortex may become epileptogenous; they certainly do not validate the conclusion that the neural origin of the major convulsions in intact man cannot be cortical. The motor display of major fits is undoubtedly accomplished through spino-muscular units, but more evidence is requisite before the contention can be sustained that the convulsions of organic cerebral disease are, as it were, allowed to occur by removal of some cortico-spinal inhibition.

2. The evidence associating the phenomena of Jacksonian epilepsy with local cortical disease is sufficiently satisfying to dispel any doubt as to their interrelation; that the "march" of such fits is in strict accordance with the accepted physiological localization of face, trunk, and limb centres in the cortical motor area, while no representation of an identical kind has been determined in respect of spinal motor centres, is of fundamental significance. Thus I have twice seen Jacksonian fits involving simultaneously solely the forefinger and thumb, and the corner of the mouth, on the same side, a combination readily explained by the juxtaposition of the corresponding cortical centres, but meaningless and inexplicable were the epileptogenous site at any lower physiological level.

3. Assuming, for the sake of argument, that the phenomena of epilepsy belong to the category of release phenomena, and that cortical disease only removes cortico-spinal inhibition, we are faced with the problem that the speculation raises as many difficulties as some may think it appears to dispel. We have to explain the violence and the caricaturing element in the motor discharges, which are altogether unlike those motor phenomena—for example, involuntary flexor spasms—that occur when spinal mechanisms are admittedly liberated from cortical control, as in spastic paraplegia. We have to explain the disorderliness of the epileptic movements, again quite unlike the organized, systematized, scarcely variable movements of released spinal reactions. There is the further difficulty, also, that this postulated temporary release from cortical control is followed by convulsive movements while more permanent release is not.

It seems impossible to avoid the conclusion that there is another element in epileptic discharges than merely a temporary cessation of inhibition from a higher level. We must be careful, indeed, as to our use of the term "inhibition"; transcortical "inhibition" is at least as probable as cortico-spinal inhibition, and the phenomena of epilepsy may conceivably result from decontrol and yet have a cortical site. I have gone more fully into this transcortical question in my Croonian Lectures[2] already mentioned, to which the reader is referred.

4. Perhaps the most significant point is whether, as a physiological fact, lower (say ponto-bulbo-spinal) centres are capable of exhibiting in action as elaborate motor manifestations as are derivable from the cortical motor ganglia, if the expression be allowed. I have already cited Jackson's view that it would be "marvellous" if this were

widely separable as a convulsive movement limited to a segment, or part of a segment, of a limb, or to a part of the face, and highly elaborate co-ordinated acts of the whole person, sometimes of considerable duration, comprised under the term "hysterical fit." The word cannot even be restricted to phenomena of a hyperkinetic class, for it might legitimately be employed to designate certain attacks of which motionlessness is the prominent feature. In other words, "fit" and "convulsion" are not synonymous, and the expression "convulsive fit" is not tautological.

Since, then, it is used to include attacks which vary enormously in type, degree, and duration, not to mention accompaniments, it might be supposed to have become almost meaningless, yet its appropriateness need not be impaired if adequate restrictions are made, and if we can trace the action of some definite physiological mechanism behind its varied phenomena.

General consent, I imagine, will be given to the view that nerve cells in a state of health store up energy *in potentia* derived from the specific nutritional material they absorb or ingest, and that in functional activity normal movements (the reference is solely to motor nerve cells in this connexion, although of course the view applies to all varieties of cell) are the outcome of liberation of this energy in kinetic form, to the accompaniment of expenditure of cytoplasmic material. Such normal liberation of energy is orderly, moderate, and controllable. We can, however, readily imagine a condition of motor nerve cells brought about by abnormal nutrition, and resulting in the development of a state of high tension and instability, whereby they will discharge suddenly, with an excessive liberation of energy, either when a postulated maximum of disequilibrium has been attained, or when a sufficient stimulus reaches them.

Following the profound discussion of this matter by Hughlings Jackson[1] in his Lumleian Lectures of 1890, I believe that the essence of a fit with convulsive movement consists in the exaggeration of a normal physiological process—that is to say, in the sudden, excessive, and yet purely temporary liberation of kinetic energy in a series of motor nerve cells, the visible consequence of which is a sudden and excessive development of many movements at once. On this hypothesis it is clearly possible for any constellation of nerve cells in the nervous system to become highly unstable or overcharged, and to discharge accordingly, so that the term "epileptic fit" might be employed, and legitimately so, for any paroxysmal symptoms attributable to the process outlined above. Nevertheless, at this point clinical expediency steps in, to warn us not to extend the meaning of the term unduly, even if only theoretically. Avoiding, therefore, too inclusive a conception of the word, we are at the same time arbitrarily limiting its designation when we confine "fit" to a hyperfunctioning of motor cells. The clinical characters, on the other hand, of suddenness, disorderliness, "caricaturing," and excessiveness are cardinal features resulting from the physiological process, and without these no symptoms can be justifiably regarded as belonging to the category in its strict sense. This contention will of itself serve to exclude a considerable number of "involuntary" nervous movements which are the sequel to release of neural function. None the less, as already indicated, it is often far from easy to draw clear distinctions between minor types of "involuntary" movement, especially if the characters just mentioned are not conspicuously present.

The Process of Discharge in a Fit.

Our next question concerns the determination of the discharge, and its radiation or spread. If we take an epileptiform or Jacksonian fit, we must concede that the focus of pathologically altered cells may be very small. For example, a patient may suffer from Jacksonian fits which always commence by twitching of the same thumb and forefinger; between the attacks he may be perfectly able to move that thumb and finger "voluntarily," hence there can be no material structural defect of the corresponding cortical motor nerve cells. Some pathological condition, however, in the immediate vicinity leads at intervals to such alteration in their cellular nutrition that they become unstable and prone to discharge "involuntarily" once the adequate provocation arises. As already hinted, we can only speculate as to what this stimulus is, but three possibilities suggest themselves: (1) it may be afferent or sensory, setting off the charge as the detonator fires the powder of the cartridge; (2) it may be intracellular, as though there were "spontaneous combustion" when a maximum of tension and instability is reached; (3) it may consist in removal of some inhibitory factor normally restraining the cell from activity. If this third possibility is entertained the problem is merely put a step further back, for we do not know what neutralizes the hypothetical inhibition and leads to decontrol.

Once the "discharging lesion," as Jackson termed it, is in action, the tendency is in the great majority of cases for its effects at once to spread to neighbouring linked physiological groups of nerve cells, so that in the course of a very brief space of time collateral cells are in discharging activity. It is in no sense likely—indeed, it is hardly possible—that these are anything else than healthy and normal, hence the important conclusion is reached that very little of a Jacksonian fit is directly due to the discharge of abnormally nourished neural units, and that by far the greater part of it is produced by consecutive discharges of normal stable cells. If this be granted, the radiation of an epileptiform fit is entirely a physiological phenomenon, and offers proof of the fact (for which there is abundant evidence otherwise) that healthy neural mechanisms may become epileptogenous, without being in the remotest degree diseased.

In the case of the general, or major, epileptic fit the circumstances cannot be materially different. While on occasion a local commencement (turning of head and eyes to one side) is indicative of the cell groups first implicated in the liberation of energy, in many instances universalization of the convulsion is almost immediate, and the fit is said to be severe. The supposition here is that the initial discharge is particularly sudden and powerful, and that many series of bilaterally situated cell groups have become unstable and, as it were, explosive. With a great quantity of this explosive material radiation through various neural levels evidently occurs with extreme rapidity, and Jackson's words contain no exaggeration:

> "speaking figuratively . . . there is the mad endeavour of the highest centres to develop the maximum of function of every part of the body . . . and of all parts at once; the phenomena of a very severe epileptic fit show that this endeavour is nearly successful; the patient is almost killed by the paroxysm, and is nearly dead (deeply comatose) after it."

The Neural Site of a General Fit.

It is of interest from the standpoint of neurophysiology to determine if possible the neural site of a general epileptic seizure, a question closely connected with the further matter of the type of movements in a fit. This latter subject is examined later, and is to be considered in association with what is now stated.

If we agree that the property of excessive and uncontrolled discharge is common to all cell groups on occasion, whatever their neural situation, it follows as a corollary that at any of the physiological levels of the nervous system epileptic phenomena may make their appearance. Owing, however, to the intimate physiological integration of these levels the symptoms can scarcely be confined to one only unless the initial "discharging lesion" is mild in degree and incapable of overcoming such resistance as collateral groups offer to excitation. Thus, as already indicated, in the case of a severe fit the chief feature is the rapid spread of the excitations through various levels and to differing mechanisms. It is probably thought generally, or is at least a tacit assumption, that ordinary major fits are the outcome of discharges of cortical nerve cells throughout the middle physiological level of both hemispheres (the Rolandic motor cortex)—as far, that is to say, as the visible movements of trunk and limbs are concerned. The view held by Hughlings Jackson was that general epileptic seizures begin in the frontal lobes (his "highest level"), whence the underlying process spreads to and implicates the middle level. Whether this is so or not is extremely difficult to decide; no constant symptom referable to release, or stimulation, of function of the

another order than the convulsive movements; it is a psychical thing, in consciousness, and all that can be said of it physiologically is that we believe it arises during functional activity of some or other central, cortical, sensory mechanism. Because of its being in consciousness its cortical site must be granted (I say nothing here of the speculation that some thalamic activities are accompanied by consciousness of them). In Jackson's clear diction:

"Crude sensations (psychical) and convulsion (physical) are in no way comparable; the comparisons and contrasts are of excessive discharges of sensory elements *during which* crude sensations arise, with such discharges of motor elements *from which* convulsion arises."

I do not know that Jackson, who was always conspicuously careful in his choice of words, was justified in claiming the discharge of sensory elements, constituting in consciousness the aura, to be "excessive." On the contrary, it has always appeared to me that, apart from the occasional normal movements accompanying convulsive movements (alluded to above), the aura is the one thing about the epileptic fit which is not disorderly, distorted, or caricatured. Its crudeness or complexity depends on whether a low-grade or high-grade sensory mechanism is implicated, but we rarely, if ever, can say of it that it is confused, or made up of conflicting elements, or that it is of exaggerated intensity, or contains any excessive quality.

The problem of its origination is in reality that of hallucinations in general. A sensory aura is a hallucination, be it of the visual, auditory, muscular, gustatory, olfactory, viscero-sensory, or any other sense class. Very valuable data bearing on questions of cortical localization have been furnished by a consideration of the sensory auras accompanying epileptic seizures occasioned by organic cerebral disease, instances of which might easily be provided from clinical experience. But we are concerned rather with the general problem of hallucinosis. The difficulty of deciding whether such phenomena are release phenomena or are irritative or excitative is, in my opinion, verbal rather than essential. Completely ignorant as we are of the process whereby function of a sensory mechanism is accompanied in consciousness by what is called a sensation, and, for that matter, of the point in a given sensory arc at which its activation becomes a conscious thing, we are not in a position to assert that a hallucination arises either because a sensory mechanism is "let go" from the control of some hypothetical inhibition, or because the mechanism is being activated by some usual or unusual stimulus. Even if inhibitory control is at first to be removed (by some equally unknown and speculative process), some excitation might still be necessary to "touch off" the prepared neural unit or system.

That hallucinations are common accompaniments of toxic or toxaemic states in no way helps us in our search for a physiological explanation of their development. When, as in the case of uncinate or temporo-sphenoidal epilepsy, a gustatory or olfactory hallucination is often associated with a visual or visuo-auditory hallucinatory state of a particularly elaborate, if certainly brief and fleeting, character, the most we can say is that this state arises in the course of the development of that abnormal physiological process which underlies all the phenomena of the fit, the aura included. Although all auras are psychical, rendering the separation of a so-called "psychical aura" meaningless, there is no good reason for supposing that this sensory component is in some fundamental way different from the motor components, as far as its development in the course of a fit is concerned, and none for imagining that its type, or recurring character, constitutes proof of the psychogenic nature of the epilepsy. Elaborate hallucinatory manifestations occur in persons who are half-drowned, half-hanged, half-suffocated; the hallucinations of uncinate epilepsy may be, and frequently are, as definite an index to the existence of organic cerebral disease as the twitching muscles of a Jacksonian case; the "déjà vu" phenomenon and the peculiar psychical condition of reduplicative paramnesia can occur as the aura alike of organic and of so-called idiopathic epilepsy. Elsewhere I have analysed these and analogous psychical manifestations of ordinary epilepsy at some length, and to this paper[7] the reader is referred.

The Question of Consciousness in Epileptic Fits.

Some epileptic attacks are attended by loss of consciousness; others are not. Unconsciousness may supervene at the outset, or develop subsequently; it may be extremely brief in duration, or may continue for some time after all convulsions have ceased. Further, of itself it is no index to the severity of the fit; a severe Jacksonian attack may from first to last involve no loss of the senses, while a petit mal seizure may consist of little else than a transient conscious "blank," an "absence épiléptique." With this considerable variability in the interrelation of unconsciousness and motor accompaniments the task of correlating their respective causes is not rendered easy.

The evidence for assigning the former to changes in the cerebral circulation is doubtless familiar to most physicians; it was excellently marshalled by A. E. Russell[8] in his Goulstonian Lectures of 1909, which should be read by all who seek an explanation of the difficult problems which epilepsy offers. Starting with this view, a line of argument in respect of the pathogenesis of epileptic symptoms has been developed by the same author, more or less as follows: Alterations in the general circulation afford an adequate explanation of ordinary fainting fits and syncopal attacks; they also explain the symptoms of more prolonged attacks in which cardiac, vasomotor, and cerebral phenomena can be observed; the suddenness of some faints, and the conversion of faints into fits, suggests the possibility of the epileptic fit itself having some origin analogous to that disorder of the cerebral circulation which causes unconsciousness. To this point I shall revert immediately; for the moment I may say that while transient cessation of that circulation is the most plausible explanation of sudden unconsciousness in epilepsy, certain difficulties remain. Consciousness is absent in negative functional cerebral states, such as concussion and coma; it is also absent during positive, excessive, functional cerebral states—for example, during the period of convulsions. Many clinical instances of the former are unaccompanied by any discharging or convulsive phenomenon whatever; conversely, a Jacksonian patient may exhibit many severe convulsive movements before consciousness is lost. It is undoubtedly difficult to elucidate both negative and positive states by reference to the same process—namely, disturbance of cerebral blood flow. General cerebral anaemia explains too much, as it were; with it the excitability of the cortex certainly diminishes, and absence, not excess, of movement should ensue. On the other hand, we might postulate (though we know no special mechanism for it) a cortical anaemia, producing unconsciousness, with retention of the circulation at lower neural levels, allowing activity of released subcortical neural systems; while such a hypothesis might conceivably provide an explanation of the features of the general fit (though, for reasons given above, I do not consider it can) it will not elucidate those of the Jacksonian variety. In view of the occurrence of degrees of unconsciousness in the epilepsies, and of the fact that negative and positive states do not proceed *pari passu* (as far as we can judge clinically), a simple theory of cerebral anaemia is insufficient for the variability of the phenomena.

Relation of Epileptic Symptoms to the Cerebral Circulation.

We may, however, in conclusion, pursue this matter a little further. The theory that the paroxysms of epilepsy are a sequel to and determined by contraction of cerebral vessels dates back at least as far as the time of Brown-Séquard. Hughlings Jackson[9] himself favoured the possibility of the paroxysm being caused by a local vascular contraction; he thought that "successions of different movements are developed by contraction of arteries"; "a convulsive paroxysm is developed by a stronger and more continued contraction" of the same arterial branches as, through coarse disease, are imagined to be producing abnormal and persistent changes of nutrition in the distribution of that artery; "it is, I speculate, through the arteries that sequence of movements is developed, whether those movements be spasm passing up the arm and down the leg, or whether they be the orderly sequences of movements in health."

the case. Unfortunately, this is a matter in regard to which definite observations are unusually meagre and inconclusive. The question is simply this: Are the tonico-clonic convulsions produced by absinthe in the decorticate or decerebrate animal identical in all respects with those readily caused by smaller doses of the convulsant in the intact animal? Only minute observation can settle the point. In respect of man, my clinical experience has led me to maintain that in conditions approximating to physiological decerebration in man the fits that may be met with are essentially tonic in character, and not tonico-clonic, as in intact man. The data supporting this conclusion have been recorded elsewhere.[6] Such evidence as is available, therefore, in respect of diseased states in the human subject does not warrant the speculation that the march of events in epileptic cases is the same whatever the neural level of the discharges; the elaborate sequence of the complicated phenomena of a major attack is not such as can be explained by implication solely of low physiological levels. This brings us to the subject of the type of movements in epileptic fits.

The Type of Movement in a General Fit.

The ascertainment of the types of movement to be seen in the case of a general fit is a matter of observation, their interpretation matter for discussion. We have to distinguish, also, changes in the motor symptoms during the course of the fit.

Perhaps it is well, in this connexion, to point out that in the fit our concern is with movements and not with muscles. In my Croonian Lectures I have given reasons derived from personal observation for believing that there may be a representation of muscular units in the cerebral motor cortex, but for our present purpose it suffices to say that the motor display is to be regarded as one of movement.

It is most important, also, to realize that "ordinary," co-ordinated movements may and do occur along with and separate from those that are called "convulsed." For example, apart from the latter, the epileptic patient may, during the fit, make champing movements of the jaws, may smack his lips, spit, make clutching movements at the throat; further, when the convulsive phase is over, and while still unconscious, he may make even more elaborate movements of his limbs, such as plucking at his clothes, etc., all of which movements present the characteristic features of purposive, "voluntary," cortical movements, except that they are outside his voluntary control. It is quite impossible to entertain any other conclusion than that these have a cortical site; their complexity and purposive and deliberate character exclude any other explanation.

Convulsive movements proper cannot be considered as anything else than caricatures of normal movements. They are violent, powerful, disorderly, and generalized, and it is not easy to recognize in them either rhyme or reason. Varying considerably in different individual cases, symmetrical or asymmetrical on the two sides of the body, implicating trunk more than limbs or vice versa, or both equally, they represent a maximum of movement in a minimum of time, and no voluntary mimicry can give other than a faint reproduction of their intensity and severity. The arms may be extended fully and hands clenched, or the former may be flexed; the thumb may be inside the clenched hand, or pressed against the forefinger, or the wrist may be powerfully flexed and the hand more open. The legs may move up and down in violent kicking movements, occasionally in crude alternation, but far more commonly in more or less symmetrical and synchronous flexion and extension. From my personal observation and study of very many hundreds of epileptic fits, both general and Jacksonian-becoming-generalized, I cannot satisfy myself either that all epileptic fits, roughly speaking, are alike, or that any definite scheme or organization of movement is revealed in their manifestations. On the contrary, I follow Hughlings Jackson in holding that a convulsion is a "contention of complex, and also of simplest, movements. In this contention the individuality of each movement is lost."

It is customary to speak of a tonic and a clonic phase of the convulsions. The former precedes the latter in the average general fit; Jacksonian fits are mainly clonic; a special variety occurs (as already mentioned) in clinical conditions corresponding more or less closely to physiological decerebration, and is known as the "tonic fit," since clonic manifestations are not usually an accompaniment.

The tonic stage of a general fit is one of practically universalized immobility; a number of movements, mutually cancelling each other, are developed with remarkable abruptness and equally remarkable power; the result is a rigid state, a "single big useless movement," as Jackson said, followed at length by a succession of such rigid states, a clonic stage, a series of so-called movements "which do nothing but 'mark time.'" Eventually the patient, exhausted by the severity of this contention of movements, which get slower and slower, sinks into a condition, sometimes not a little alarming, of profound collapse and coma, brief though it may be in reality. On at least two occasions I have seen a condition in all its essentials as closely resembling death as I am ever likely to observe.

Holding these views of the physiological phenomena of a general convulsion, I can scarcely regard with patience various speculations indulged in by some, to the effect that the convulsed movements are identical with those of the foetus *in utero*, and that they represent an attempt on the part of the sufferer to retreat again for shelter from an unsympathetic environment into the stillness of the amniotic fluid. I do not consider that they have any "meaning" whatever; they are of no more "significance" than an explosion of powder. Even in respect of the "march" of movement in a Jacksonian fit, the clinical type of exaggerated, caricatured movement in no way resembles those that are called "voluntary" or purposive, while the "march" of the movements follows anatomico-physiological lines alone and presents no point of comparison, but many of contrast, with the co-ordinated movements of a limb in health.

Summarizing at this stage the conclusions reached, largely on clinical grounds, I may state them as follows:

1. The convulsed movements of a general fit resemble those obtained by tetanizing electrical stimulation of the motor cortex (middle level) in their crudeness and severity, and by the action of convulsants on cortically intact experimental animals.

2. In their elaborateness, disorderliness, and violence they do not resemble the involuntary movements known to occur when spinal levels are released by cortico-spinal disease. The reactions of the spinal animal are orderly, systematized, and scarcely variable with variations in the stimuli evoking the reactions.

3. Combinations of movement have frequently been seen in cases of Jacksonian epilepsy which cannot be explained by any known juxtaposition of centres at infracortical levels.

4. Along with the convulsed movements of general fits, "ordinary" movements may occur; these resemble "voluntary" movements, except that the element of "volition" is awanting; their neural site must be cortical, but is certainly not Rolandic. It is therefore conceivable that transcortical decontrol is responsible for some of the discharging movements.

5. As far as man is concerned, fits the origin of which is at some infracortical level are not in all respects identical with those of the ordinary major attack.

The Phenomenon of the Epileptic Aura.

Consideration of the question of the nature and origin of the epileptic aura is not calculated to lend any support to the view that the manifestations of epilepsy are all essentially infracortical. While not constant (as far as the mind can subsequently recall the initial stages of an attack), it is when present an integral part of the seizure and of localizing value, as every student of the subject is aware. We must keep rigorously in mind the fact that the aura is definable as a sensation, crude or elaborate as the case may be, either referred by the patient to some part of the body or limbs or belonging to one or other of the special senses. Being a sensation, it is a phenomenon of

The investigation now to be described was carried out with the idea of seeing (1) whether there is any relation between the amount of calcium in the saliva and the rate of development and amount of dental caries, and (2) whether it is possible readily to alter the calcium in the saliva, especially by varying the diet in factors other than the calcium. As the work progressed, it was realized that many of the figures for calcium in the saliva were low compared with those obtained by other workers, and the possibility of this being due partly to tuberculosis was therfore considered.

In regard to the first point. The work carried out by Röse[3] seems to indicate that, if anything, there is less calcium in the saliva of those people with fewer carious teeth; but that, if the amount of calcium in the ingested food is raised, then the calcium in the saliva may be in some cases also raised. Recently P. P. Laidlaw and Spencer Payne have worked out an accurate method for estimating small amounts of calcium,[4] and have also studied the calcium content of the saliva of people whose mouths vary from the point of view of carious teeth. No constant relationship, however, was found between the amount of caries and the calcium in the saliva. As will be shown later, the amount of calcium in the saliva may vary from week to week with small alterations in the diet, and probably also with other unknown conditions, depending on the metabolic state from the natal or even pre-natal period up to the day of observation. It would not be expected, therefore, to find a close relationship between the calcium of saliva, as observed on one or two occasions, and the amount of dental caries at that time. On the other hand, Mrs. Mellanby and I showed (in the paper referred to above[2]) that by raising the amount of fat-soluble vitamin in the diet we were able to delay the spread of caries. I shall now show that by increasing the fat-soluble vitamin in the diet the salivary calcium is raised. There would, therefore, seem to be some connexion between the quantity of calcium in saliva and caries, but to prove this definitely a more prolonged investigation would have to be made.

The second part of this inquiry—namely, the effect of diet on the salivary calcium—has given very definite results which will now be described.

Method of Estimating the Calcium.

The saliva was obtained by asking patients to spit into glass tubes three minutes after their mouths had been washed out with water. Various ways of estimating the calcium were employed, and the results recorded were obtained by two methods: (1) the alizarin method described by Laidlaw and Payne (L. and P.);[4] (2) the Kramer-Tisdall method (K.T.).[5] In practically all cases in which estimations were made by both methods the results agreed.

The Effect of Small Specific Differences in the Diet on the Amount of Calcium in the Saliva.

The amount of calcium in the salivas of patients having different diets was estimated. The diets were those described in the paper already referred to in the BRITISH MEDICAL JOURNAL of August, 1924.[2] The principal differences between the diets may be summarized as follows:

Diet A contains most milk (1½ to 2 pints), cod-liver oil 6 drachms, and an egg daily, but no oatmeal.

Diet B contains least milk (3/4 pint), no cod-liver oil and no egg, but 3 oz. of oatmeal, and olive oil (6 drachms).

It will be seen that diet A contains most calcifying vitamin and diet B the least, and that diet B is also peculiar in containing a large amount of oatmeal.

1. *Diet A.*—Twenty children were given diet A (more vitamin) and their salivas contained an average of 10.68 mg. of calcium in 100 c.cm.

2. *Diet B.*—Nineteen children were given diet B (less vitamin and more cereal) and their salivas contained an average of 4.68 mg. of calcium in 100 c.cm.

The following table gives examples of children fed on diets A and B.

Twelve patients on the ordinary hospital diet, which is intermediate, as regards the amount of calcifying vitamin, between diets A and B, contained an average of 7.79 mg. of calcium in 100 c.cm. of saliva.

DIET A.				DIET B.			
Patient.	Calcium.	Method.	Weeks on Diet.	Patient.	Calcium.	Method.	Weeks on Diet.
	Mg.				Mg.		
B. R.	9.50	L. & P.	8	G. C.	6.00	L. & P.	104
	9.78	K.T.	28		5.40	K.T.	106
S. H.	9.80	L. & P.	16	C. W.	4.50	L. & P.	12
	8.69	K.T.	20		3.18	K.T.	32
V. P.	11.07	L. & P.	16	L. E.	5.70	L. & P.	8
	11.63	K.T.	44		5.84	K.T.	28
S. R.	12.60	L. & P.	52	I. R.	2.46	L. & P.	23
	12.49	K.T.	91		2.82	K.T.	31

Alterations in the Calcium Content of Saliva as the Result of Changes in the Diet Alone.

1. Some patients on admission to hospital were found to have an average of 3.07 mg. of calcium in 100 c.cm. of saliva. Their diets were unknown. They were now given diet A, with the result that the average amount of calcium was increased from 3.07 to 7.07 mg. in 100 c.cm. of saliva—for example, in the case of B. R. the amount of calcium was increased from 4.1 to 9.5 mg. in eight weeks.

2. Some patients who had been having diet B for ten weeks had an average of 4.47 mg. of calcium in their saliva. Later they were given diet A, and then the calcium was increased from 4.47 to an average of 12.07 mg.

3. Other patients on diet B, with an average of 5.15 mg. of calcium in the saliva, were given the ordinary hospital diet, and their calcium was increased, but only to an average amount of 8.95 mg.

4. Some patients on diet A, with an average of 12.02 mg. of calcium in the saliva, were later given diet B, when the amount of calcium was only slightly diminished—namely, from 12.02 to 11.67 mg. These patients were kept on diet B for four weeks only, as when this part of the investigation was attained the conclusion was reached that the general health of the patients on diet B was not so good as that of those on diet A. It is known that vitamin A can be stored in the body, and, presuming that this substance is of some importance in varying the percentage of calcium present in the saliva, it is possible that the quantity stored in the lengthy period during which diet A had been given was not sufficiently depleted to cause an alteration in the amount of calcium in the saliva in the four weeks on diet B.

Other Factors in Addition to Diet which might have Influenced the Results given above.

The average amount of calcium in the saliva of the children on admission to hospital was only 4.77 mg. in 100 c.cm. This is low compared with the figures obtained by other workers, which vary between 6 and 12 mg. per 100 c.cm. Therefore, various factors were considered which might be the cause of this low calcium content.

1. *Tuberculosis.*—The children all suffered with tuberculosis of bones or joints, in which varying degrees of decalcification had occurred. It was found that in most cases those children who had suffered from the disease longest had the smallest amount of calcium in their saliva on admission to hospital. The following are examples:

R. I. had had disease of the vertebrae for ten years; it had produced marked bony destruction, and was active on admission; his saliva contained only 0.90 mg. of calcium in 100 c.cm.

H. L. had had tuberculosis of the sternum and tarsus for three years, with sinus formation; his saliva contained only 1.60 mg. of calcium in 100 c.cm.

H. A. had had active disease of the hip-joint with abscess formation, but no bony destruction, for three months. His saliva contained 6.88 mg. of calcium in 100 c.cm.

However, there is no reason to believe that this factor was of primary importance in altering the relative amount of calcium in the salivas of the children in the diet groups, since this disease was common to all, and those children with the least active tuberculosis were usually put on diet B, and those who were suffering most severely from this infection were put on diet A.

More direct evidence, however, has taken the place of speculation. Russell[8] emphasizes the importance of the facts that the symptoms of the various stages of the epileptic fit are closely mimicked by those following heart-block in Stokes-Adams disease; that uraemic convulsions are indistinguishable from those of epilepsy and are almost certainly due to cerebral oedema, consequent increase of intracranial tension being followed by temporary failure of the cerebral circulation; that in some recorded cases of value temporary cessation of the heart's action (disappearance of radial pulse) has immediately preceded the development of a fit. A number of direct observations of the human cortex during an epileptic convulsion have been made by surgeons (Horsley,[10] Kennedy and Hartwell,[11] Leriche,[12] Horrax[13]). Sudden blanching of the cortex and pial vessels, and arrest of cerebral pulsation, is at once succeeded by pronounced hyperaemia and venous engorgement during the convulsive movements, according to the mean of the recorded observations. Reference might also be made to the apparent association of fits with disorder of the cerebral circulation in certain cases of Raynaud's disease, of which a number have now been reported (see a paper by H. J. Norman[14]).

While it would be unwise to ignore the cumulative effect of these differing lines of evidence, I do not think, after having given much consideration to the problem, that they can fairly be taken as showing anything more than that changes in the cerebral circulation accompany, in all probability, the march of events in an epileptic discharge. In my opinion Russell is justified in concluding that, even if vascular disorder is causal, it only carries the pathology of epilepsy one stage further. But I am not convinced that the association constitutes a causal relationship. The cerebral and general circulation is under the control of a vasomotor centre in the medulla oblongata; alterations in the whole cerebral vasomotor apparatus may be caused by dysfunction of that centre. Sudden loss of consciousness may not be of vascular origin, though accompanied by vascular change; the same pathological stimulus may act both on the bulbar vasomotor centre and on cortical neural elements themselves. That this would appear to be the case in respect of the unconsciousness following trauma is strongly suggested by the recent experiments of Knauer and Enderlen[15]; and although the analogy with epilepsy is remote, it is well not to lose sight of the possibility of the circulatory phenomena of the fit—as observed when the cortex is exposed—being no more than a sequel to a central neural disturbance of function at the level of the medulla.

If, however, we are sufficiently convinced by the evidence sketched in outline above, we should still be at the stage of pure speculation in regard to the question of how transient cerebral anaemia—in some cases only, not in all—causes neural mechanisms to discharge; we should have to imagine a local cerebral anaemia for the phenomena of Jacksonian epilepsy; and I submit that many cases of local and sudden cerebral anaemia, as in monoplegias of embolic or thrombotic origin, are unaccompanied by any discharging phenomena whatever. Nor is the solution of the problem facilitated by ascribing the motor discharges to anoxaemia. Imperfect oxygenation recurring periodically, locally, and seemingly vanishing after an attack—how is such a process to be imagined? And how will any such theory account for the aura of a fit, which, as has been stressed above, unquestionably appears to partake of the nature of a normal, orderly, regularized, non-excessive function of a given sensory mechanism? Is neural *activity* accompanied by *anaemia* in the cerebrum of the normal individual?

The truth is that the gulf between the vascular and the neural is almost as impassable as that between the physical and the psychical. In this lecture, intentionally, no allusion has been made to clinical varieties of epilepsy of an unusual kind; if, however, the phenomena of so-called "epilepsia partialis continua" are considered, they may justifiably be used as an argument for the improbability of "discharging lesions" being based on persistence of an abnormal vascular state; they appear to resemble much more those of continuous excitation of a reflex neural arc by a persisting neural stimulus.

It seems to me reasonable to suppose that the crescendo character of the symptoms of the epileptic fit is due to direct action of a neural system on collateral and lower neural systems; if a vascular factor is involved, I have tried to show the possibility of it itself being of neural origin. In some instances this may have a bulbar locus; in others there is as clearly a transcortical commencement for the attack. We come back, therefore, to the view indicated at the outset: any constellation of nerve cells in the neuraxis may become unstable; hence physiological varieties of "fit" are to be expected. It is evidently more correct, clinically and physiologically, to speak of "the epilepsies" than of "epilepsy," and this fact by itself should lead us to avoid giving our patients the impression that once a diagnosis of epilepsy is made it is tantamount to pronouncing their doom. On the contrary, increasing latitude in our conception of the condition should lead to modification of therapeutic pessimism.

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DIETETIC CONDITIONS WHICH INFLUENCE THE CALCIUM CONTENT OF SALIVA:

THE POSSIBLE SIGNIFICANCE OF THESE FACTS IN TUBERCULOSIS.

BY

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Introduction.

THE study of the etiology of dental caries and other defects of the teeth has usually centred around the chemical, physical, and bacteriological condition of the mouth, and, among other factors, saliva has been considered of importance in this connexion. However, in spite of the large amount of work by Miller, Röse, Pickerill, Marshall, Howe, Bunting, and many others, no relationship has ever been proved between the alkalinity of the saliva and the immunity to caries, as those upholding the acid-decalcification theory of caries might have hoped to establish.

Less work has been done on the calcium content of saliva, yet it is likely to be important. Among other possibilities it may hinder the removal of calcium from the teeth on the production of acid, or it may help in the hardening of the enamel after eruption, if this takes place, or it may aid in the arrest of caries.

The experimental work of May Mellanby[1] has proved that the structure of dogs' teeth, and probably also of human teeth, can be controlled by diet and environment. Foods rich in fat-soluble vitamin (for example, cod-liver oil, egg-yolk, milk, and most animal fats) tend to help the formation of well calcified, regularly arranged teeth, while other foods (for example, cereals, and especially oatmeal) tend to cause the development of badly formed teeth. Thus the total effect of a mixed diet is the outcome of a battle between these different dietetic influences.

On the basis of these facts Mrs. Mellanby and I started, three years ago, a clinical investigation to determine whether there is any relation between diet of the above-mentioned type and dental caries. Some evidence was obtained that a diet rich in fat-soluble vitamin not overburdened with cereal tends to prevent the onset and spread of dental caries more rapidly than does one containing little fat-soluble vitamin and more oatmeal and other cereal. These findings were published in a preliminary note (together with J. W. Proud, L.D.S.) in the BRITISH MEDICAL JOURNAL of August 30th, 1924.[2]

adherent pleura. If the parietal and visceral pleurae are separated, as they are in cases of pneumothorax, one would expect effusion to form if pleurisy developed. In almost every case of spontaneous pneumothorax (where, of course, the disease has spread to the pleura) effusion develops. The cytology of the fluid is that of a tuberculous exudate, and although at first tubercle bacilli are not usually found, in long-standing effusions they can almost always be demonstrated. In none of my cases has any other organism been found. If my opinion is correct we would expect to find that in cases of non-tuberculous disease artificial pneumothorax would not be complicated by pleural effusion, and this is actually the case. In one of my cases of abscess of the lung a small pool of fluid appeared for a short time, but in none of my other 54 non-tuberculous cases of artificial pneumothorax did any fluid form—a percentage of less than 2, as against 41.4 for the tuberculous cases.

In spontaneous pneumothorax effusion is usually present, being absent in only 4 of my 22 cases, and these 4 all did well. As a rule, the fluid in spontaneous pneumothorax becomes thick tuberculous pus, the lung never re-expands, and the outlook is very serious; 13 of my 18 cases in which fluid formed are dead, and only 2 can be said to have done really well. I think thoracoplasty should be considered early in many cases of spontaneous pneumothorax, for unless the pneumothorax cavity can be obliterated by re-expansion of the lung it will sooner or later become infected, and the outlook is almost hopeless.

The treatment of pleural effusion complicating artificial pneumothorax depends on many factors, and each case must be taken on its merits. If the fluid is left it will usually cause obliteration of the pneumothorax cavity by pleural adherence and fibrosis starting at the bottom of the pleural cavity and working upwards. If this result is desired, therefore, the fluid should be left, but the patient must be kept under careful observation lest too much fluid develops and causes displacement of the mediastinum. Before this happens a sufficient quantity of the fluid must be aspirated. Many cases in which artificial pneumothorax treatment is allowed to terminate in this way do extremely well. As the lung is drawn out a satisfactory fibrosis develops over the diseased areas and the healthy parts of the lung begin to function once more. If, however, it is thought better to prevent obliteration of the pneumothorax cavity and to continue the refills it is very important to keep the pleural cavity dry by aspirating the fluid at each refill. Usually after one or two aspirations the fluid does not re-form. When fluid forms, a lung which was previously partially collapsed will become flattened out, and as the fluid accumulates the pressure rises, but it should never be allowed to rise sufficiently to displace the mediastinum. Sometimes the first indication of the presence of fluid is an unusually high intrapleural pressure. In one of my cases a pressure which was usually negative before a refill was found to be +5+10, and after giving 100 c.cm. of air it rose to +10+15. The pressure may, however, be negative in spite of the fluid, but a small refill will render it positive. For example, in one of my cases with fluid the pressure before refill was −10−6, but it became +17+19 after only 100 c.cm. of air had been given.

In replacing fluid the quantity of gas given must be much smaller than that of the fluid removed; roughly speaking, about one-quarter the quantity is required. In one case 225 c.cm. of fluid was removed and 200 c.cm. of air given, and the pressure was altered from −8−0 to 0+6. In another case where the initial pressure was −17−9, after removing 600 c.cm. of fluid it became −22−13, and after another 200 c.cm. had been removed it was −28−15. On adding 200 c.cm. of air the pressure at once rose to −16−9, another 200 c.cm. made it −10−6, and a third 200 c.cm. sent the pressure to −4−0. In one more case a pressure of +7+14 became −7+4 after removing 1,700 c.cm. of pus. It is not wise to allow the intrapleural pressure to alter too suddenly, and in replacing fluid with gas I think it is best to use two needles, the gas being introduced through one and the fluid flowing out through the other; by this method the pressure can be raised or lowered or kept constant at will. If it is wished to encourage the lung to re-expand the fluid should be removed without adding any gas, or if this is not thought wise oxygen should be used, as this is absorbed more quickly than air.

If the fluid is purulent the case is very much more serious. The pus should be aspirated and the intrathoracic pressure kept as low as possible in order to help the lung to re-expand. If the lung does re-expand the outlook is hopeful, but if x rays show that there is no sign of re-expansion in the lung then we must face the fact that the patient will probably have a permanent pyopneumothorax and be liable to any of the many complications of that condition. In these cases I have washed out the cavity with saline, normal or hypotonic. I have injected 2 per cent. formalin in glycerin and other disinfectants into the pleural cavity, and in cases where the pus is thick I have injected some modifying fluid and rendered the pus more liquid and easier to aspirate, but the end is the same. If, therefore, the fluid is purulent and the lung fails to re-expand I think the best chance for the patient is to perform thoracoplasty as soon as possible. Before the operation, however, it is necessary to get the patient as fit as possible by washing out the pleural cavity and allowing him a period of rest in bed and good feeding. In most cases a preliminary operation for evulsion of the phrenic nerve is desirable. It is hardly necessary to add that active disease of the other lung is a contraindication to thoracoplasty, but in this case the outlook is almost hopeless. If, however, the better lung shows no sign of active disease I feel strongly that in these cases thoracoplasty offers the best chance to the patient.

A CASE OF CHRONIC OBSTRUCTIVE JAUNDICE:

FOCAL NECROSES IN THE LIVER: MYELOID TRANSFORMATION OF THE SPLEEN.

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I HAVE recently encountered a case of chronic obstructive jaundice which presents some points worthy of comment. I will relate only the main points of the patient's last illness.

A man, aged 62, had chronic obstructive jaundice (complete obstruction) owing to primary adenocarcinoma of the hepatic duct at its junction with the cystic duct. He died on March 11th, 1926, after having had jaundice for only about one month. He had had occasional haematemesis, but at the *post-mortem* examination Dr. E. Bock found no lesion in the oesophagus, stomach, or upper bowel to account for it. The adenocarcinomatous growth was small and macroscopically scar-like. No metastases were seen. The liver weighed 2,300 grams (70½ oz.), and the intrahepatic bile ducts were distended with colourless bile. On microscopic examination sections of the liver were found to contain numerous foci, recalling by their small size and their irregular distribution the focal necroses of infectious diseases (enteric fever, etc.). They were distributed in various parts of the hepatic acini and contained necrotic liver cells and bile pigment; in many of them there were also quantities of large phagocytic cells (macrophages), and in some of them there were also collections of polymorphonuclear leucocytes, as if suppuration were threatening.

There had been no fever during life, and an infective origin for the focal necroses can hardly be maintained. It seems to me that these necroses are most probably a minor variety of what Horst Oertel[1] called "multiple non-inflammatory necrosis of the liver with jaundice," an example of which I described with a coloured illustration in 1909.[2] One possibility is that they are merely capillary "cholérrhagies" due to overdistension of bile capillaries (apoplexia biliaris hepatis), but biliary focal necroses of a peculiar kind in the liver have been found in the absence of obstructive jaundice.[3]

Another point of interest was the enlargement of the spleen, which I have not yet mentioned; it had been a puzzling feature of the case during life. This splenomegaly had much diminished (as splenomegaly generally does) after haematemesis, but at the necropsy the spleen still weighed 770 grams (27 oz.); it was evenly enlarged, of

2. *Water.*—All the patients were drinking Sheffield water, which has a low calcium content. To test this point the amount of calcium of a few Sheffield persons was obtained and compared with the amount found in a few London residents. The average quantity of calcium in the salivas of the ten Sheffield persons was: adults 8.07 and children 7.19 mg. in 100 c.cm. of saliva. The average quantity of calcium in the saliva of the ten London cases was: adults 10.61 and children 9.34 mg. in 100 c.cm. of saliva. Röse[3] carried out investigations with the idea of relating the extent of caries to the calcium content of the drinking water in different districts. He found that, on the whole, the children living in districts where the water was hard suffered less from caries than those living where the water was soft. The amount of calcium in the saliva of these subjects, however, was often less when the water was hard than when it was soft. Röse states that the full influence of a calcium-rich diet is only seen after several generations. It was found in the present investigation that the addition of calcium phosphate, calcium lactate, and calcium carbonate over a short period to the dietary of patients had no effect on the calcium content of the saliva.

3. *Age of the Patients.*—No definite relation was noticed between the age of the patient and the amount of calcium in the saliva.

4. *Hour of Collection.*—The amount of calcium in the saliva varied slightly at different times of the day in individual persons, but this variation was not constant.

5. *Rapidity of the Secretion of the Saliva.*—It was not found that the percentage amount of calcium varied appreciably with the rapidity of secretion.

6. *Hydrogen-ion Concentration.*—This varied between a *p*H of 6.5 and 7.5, and bore no relation to the amount of salivary calcium, nor to the degree of dental caries.

SUMMARY.

1. The amount of calcium in the saliva is influenced by diet. (*a*) A high calcium content of the saliva can be produced by a diet having a large fat-soluble vitamin content. (*b*) A low calcium content can be produced by a diet containing much cereal (especially oatmeal) and comparatively little fat-soluble vitamin, although the amount of calcium ingested in this diet may be the same as, or even greater than, in (*a*).

2. The calcium of the saliva is not increased by increasing the calcium of the diet over a short period.

3. Tuberculous children appear to have a lower calcium content of the saliva than normal children, and, on the whole, low resistance to the infection is accompanied by low calcium content. This relationship between resistance to infection and salivary calcium requires further investigation before it can be regarded as established.

4. It will be seen that the calcium content of the saliva is controlled by the same factors of special nutrition as those on which the calcification of teeth and bones also depend. If, therefore, caries of the teeth be influenced by the chemical composition of the saliva, then it is evident that the problem of dental caries is at least partially one of general metabolism. This point of view is corroborated by other results showing the relation of diet and caries, published elsewhere.

The expenses of this research were borne by the Medical Research Council and the Dental Board of the United Kingdom, to both of whom I wish to acknowledge my indebtedness.

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PLEURAL EFFUSION COMPLICATING PNEUMOTHORAX.

BY

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PLEURAL EFFUSION is the most common complication of pneumothorax. If every patient with pneumothorax were examined daily with the *x*-ray screen there would be seen at some time or other in practically every case a small pool of fluid lying in the costo-diaphragmatic angle. Such small collections of fluid, however, are quickly absorbed; they come and go, and are of no importance. In speaking of pleural effusion I mean cases where the fluid at least covers the diaphragm and lasts more than a week, and I do not include those small transient effusions discovered accidentally by *x* rays.

Out of 309 consecutive cases in which I have successfully induced artificial pneumothorax for pulmonary tuberculosis an effusion formed in 128 (41.4 per cent.), and of these 47 (36.7 per cent.) are dead. Of the 181 cases in which no fluid formed, 57 (31.5 per cent.) are dead. Of the 128 cases the fluid remained clear in 92, and 27 (29.4 per cent.) of these are dead. In the other 36 cases the fluid was tuberculous pus, and 20 (55.6 per cent.) of them are dead. In time, no doubt, more of these cases will die of tuberculosis, but this applies equally to cases with and without fluid, so that the figures can be taken to show that, roughly speaking, cases which have clear pleural effusion do neither better nor worse than dry cases, but that if a tuberculous empyema forms the outlook is much more serious.

It should be clearly understood that these 309 cases do not include non-tuberculous cases, nor those where artificial pneumothorax was attempted but failed or was only partially successful. I have divided them into three groups: C1, where the disease was unilateral; C2, where there was some disease in the other lung but only slight; C3, where more than one-third of the better lung was affected. The last group consists largely of cases where artificial pneumothorax was induced as a last resort, and so the mortality is very high. Had the patients in this group lived longer many more would undoubtedly have developed effusion.

The following table shows the number of cases in the various groups which developed fluid.

	C1.		C2.		C3.	
	Cases.	No. Dead.	Cases.	No. Dead.	Cases.	No. Dead.
Total ...	126	24 (19%)	125	47 (34.8%)	48	33 (68.7%)
No effusion ...	78	13 (16.6%)	72	22 (30.6%)	31	22 (71%)
Clear fluid ...	36	5 (13.9%)	45	14 (31.2%)	11	8 (72.7%)
Pus	12	6 (50%)	18	11 (61.8%)	6	3 (50%)

In my series, effusion in the great majority of cases developed in the first six months and rarely occurred after the first year. The number of months after the induction of artificial pneumothorax when the effusion formed was:

1 to 3 months	45 cases
4 to 6 ,, ...	43 ,,
7 to 12 ,, ...	29 ,,
13 to 18 ,, ...	5 ,,
Over 18 months	6 ,,

Various explanations have been given to account for the frequency of pleural effusion in cases of pneumothorax. Irritation of the gas, its temperature, the repeated punctures of the parietal pleura, or the intrapleural pressure have all been described as playing a part in the production of fluid. In my opinion, however, these effusions are true tuberculous exudates, and in my experience they occur with equal frequency whether the gas is heated or not and whether air, nitrogen, carbon dioxide, or oxygen is used. We know that pleurisy is a common complication of pulmonary tuberculosis, and that it often leads to

in enucleating the enlargement, which the pathologist described as a fibroadenoma without any trace of malignancy. I took great care to remove all the shelf between the vesical and prostatic cavities; in fact I took away so much that my assistant was afraid I might open into the rectum.

For a time the patient did very well, and three or four weeks later, when the wound was healed, was passing water without the least trouble. Two months after the operation he began to experience some difficulty, more especially after a tiring day's work. I saw him in August, when he was complaining of great difficulty, the stream being small and intermittent. On passing instruments I encountered some obstruction at the internal meatus, though I managed to get steel bougies through. The dilatation gave him relief for some time, but he returned in February, 1926, when the suprapubic wound had broken down and formed a fistula. He was passing some urine normally with great difficulty, but most of it was coming by the suprapubic route.

I operated again on February 23rd and found a pin-point opening surrounded by dense scar tissue. I removed all the obstructing partition, made a large internal meatus, tied in a big catheter by the urethra and drained the bladder suprapubically. In three weeks the abdominal wound was healed and the patient passing urine without the least difficulty; in fact he does not remember ever micturating so easily and quickly before.

The points of special interest in these cases are:

1. All three patients complained of difficulty as their most prominent symptom before the prostatectomy.

2. The enlargement was in each case of the smaller and more fibrous type, a fact which supports the usually held theory that post-operative obstruction is commoner in this class of case.

3. The rapidity with which the wounds healed and the ease with which the patients subsequently passed water lead me to believe that in dealing with post-operative obstruction it is advisable to tie a catheter into the bladder by the urethra off and on until the suprapubic wound is healed. I have not found that the patient objects to its insertion and retention, if the instrument is changed and the urethra irrigated daily, and a good lubricant used.

4. While there is no doubt that the Thomson-Walker open operation is in the majority of cases greatly to be preferred to the old "blind" method, Case III proves that cicatricial contraction may cause obstruction and difficult micturition even after the more thorough procedure.

STUDY OF AGGLUTINATION OF THE GONOCOCCUS IN MAN.

BY

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MUCH work has been done upon the agglutination of the gonococcus by means of the experimental inoculation of animals, and all workers appear to be unanimous that agglutinins are produced; the titre of such serums is high and there is general agreement that a titre of 1 in 1,600 is relatively easy to obtain.

It is on the subject of differentiation of type that divergence of opinion becomes evident. Some workers have been able to differentiate a number of types and subtypes; the precise number varies. Other workers have concluded that it is not possible to distinguish these types with any certainty by means of the agglutination test. A review of the literature has been given by Tulloch.[1]

An attempt to investigate this matter in the human subject presented an initial difficulty in that failure to obtain a positive result might possibly be due to the fact that the patient was infected with a type or strain of gonococcus not present in the polyvalent stock antigen. The only practicable method of overcoming this obstacle was to discard the idea of using a stock antigen and instead to use for each patient his own autogenous strain.

The following technique was therefore employed. Upon a patient presenting himself with a newly contracted urethral discharge a culture was made upon the medium always used in this laboratory and described by me in the *Journal of Pathology and Bacteriology* at various times. Next morning the growth was examined to ascertain that pure culture was possible, and subcultures made. These were incubated for twenty-four hours, examined for contaminations, and, if satisfactory, made into a suspension of about 2,000 million per cubic centimetre with normal saline. The suspension was then violently shaken for a few minutes to break up any clumps present. The further steps in the preparation varied.

Four methods of treating it were tested. In the first neither antiseptic nor heat was used, the suspension being placed in the ice-chest immediately after shaking. The low temperature is quite sufficient to kill the organism. The second method was to heat at 55° C. for thirty minutes, then place in the chest. The third was to heat as before and afterwards add 0.1 per cent. of formaldehyde before storing in the ice-chest. Lastly, 0.1 per cent. of formaldehyde was added without preliminary heating. Immediately before the actual test was performed a sufficient quantity of antigen was taken from the bulk stock and passed through filter paper or a plug of wool in order to ensure a smooth suspension.

In the case of gonococcal urethritis a period of three or four weeks was allowed to elapse before taking a sample of blood. The purpose of the interval was to allow the patient an opportunity to develop any complications usual to that period—orchitis and so forth. It was thought that a more generalized infection would favour the production of agglutinins.

The test was performed the day after the blood was obtained, which meant that the antigen was then about twenty-four days old. The dilutions ranged from 1 in 10 to 1 in 320. The tubes were incubated at 55° C. for two hours, then put out on the bench at room temperature for another twenty-four hours. They were inspected at frequent intervals. The antigen and serum were stored and the test repeated at the end of a fortnight and again when the serum was six weeks old. This last procedure was to ascertain if any change in the serum took place with age.

The total number of cases examined was 21; they can be conveniently divided into two groups of 16 and 5 respectively.

The first group comprised the patients in whom the organism had been obtained from the urethra. Most of them had developed posterior urethritis, and four of them testicular lesions also, by the time their serum was collected. The result of the tests showed that the serum of every patient in this group was completely negative in all dilutions. Such a result has been obtained by other workers and has been explained on the assumption that agglutinins are not formed where the infection is localized or semi-localized.

The results obtained in the second group are therefore interesting. This group consisted of five cases of gonococcal arthritis. In each case the organism was obtained in pure culture from the joint fluid. Primary cultures are not difficult to obtain provided the fluid is inoculated as soon as it is withdrawn and not left to lie about the ward for an hour or so. The subcultures were made the next morning when the blood was collected and the serum separated. Immediately the antigen was ready for use the test was performed, and repeated at the same intervals as in the first group. The dilutions used were the same. Four of the serums were negative in all dilutions; the fifth was positive in a dilution of 1 in 10. This particular serum was tested again the next day for confirmation. Fourteen days later it was still positive, but was negative when tested at the age of six weeks.

At the present moment an original method of treating the serum is being tried and appears to offer better results in the second group, but the method is still under observation.

CONCLUSIONS.

1. Agglutinins to the gonococcus are not produced in man when the infection is limited to the genito-urinary system.

2. In a generalized infection such as arthritis the amount of agglutinin produced is so small and uncertain that the agglutination test as ordinarily performed is of no value for diagnostic purposes.

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rather firm consistence, and red on section. Some of this enlargement might have been due to congestion, but some of it was certainly due to myeloid transformation. On microscopical examination the splenic pulp, not the lymphatic follicular tissue, was enlarged. In Giemsa-stained sections the pulp was found to contain great numbers of eosinophil cells and erythroblasts and a certain number of myelocytes; a few megakaryocytes were also found (in other sections). A blood count at the end of February, 1926, had given 3,416,000 erythrocytes and 5,450 white cells to the cubic millimetre of blood (of the white cells 89 per cent. were polymorphonuclear leucocytes, 5 per cent. were lymphocytes, 4 per cent. were monocytes, and 2 per cent. were eosinophils), and in a blood film taken on March 10th (the day before death) a few myelocytes were seen.

Since myeloid transformation (metaplasia) was first discovered by Dominici it has probably been more often observed in the spleen than in any other viscus. O. Naegeli, who gives an excellent review of the subject,[4] says that though Itami failed to produce myeloid metaplasia by experimental bleeding, Skornjakoff succeeded in obtaining this vital reaction by allowing sufficient intervals for recovery between the bleedings. Myeloid transformation of the spleen may (though of course it does not always) occur as a vital reaction to anaemias and cachexias of various kinds and various infective and toxic agents,[5] including even mercury perchloride.[6] It has likewise been observed as a compensatory reaction in cases in which the bone marrow has been reduced by osteo-sclerosis.

In conclusion, I must thank Dr. O. Bode (house-physician) for help in the clinical examination of the case, and Dr. E. Bock, and likewise Dr. J. W. McNee, for help in the pathological and histological examination.

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THREE CASES OF OBSTRUCTION AT THE VESICAL OUTLET AFTER PROSTATECTOMY.

BY

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A GREAT deal is written about the satisfactory results of prostatectomy, but comparatively little about the unsatisfactory cases. Yet it is by no means uncommon for obstruction at the vesical outlet to recur after a short interval, however carefully and apparently successfully the operation has been performed, and when there has been nothing to suggest malignancy. The following typical cases from my own practice may be of interest.

CASE I.

In October, 1922, a man, aged 62, was sent to me complaining of difficult and frequent micturition of twelve months' duration. He stated that he was passing urine ten or a dozen times a day, and two or three times at night, the first few hours of recumbency being untroubled. His eye and knee reflexes were normal, and nothing unusual could be palpated in the renal and vesical areas. His urine was free from blood and from any sign of infection, but the residue left in the bladder after micturition amounted to 4½ ounces. On rectal examination the prostate was of uniform consistency, though not so elastic as usual, and the right lobe was definitely enlarged.

I did the ordinary (Freyer) suprapubic prostatectomy, but experienced some difficulty in enucleating the enlargement, which was more fibrous than usual. I was particularly careful to divide any shelf existing between the prostatic and vesical cavities, and no abnormal symptoms showed themselves during convalescence. The suprapubic wound was completely closed and the patient was passing water by the twenty-second day. He stated that he had to strain more or less to get the urine away, but bougies and catheters passed readily into the bladder.

Five months later he returned complaining of great difficulty and considerable pollakiuria, so much so that he asked for something further to be done. Instruments would not pass owing to definite obstruction at the internal meatus.

I excised the scar tissue, opened the bladder suprapubically and freed it anteriorly, passed a metal bougie by the urethra into the prostatic cavity, put the patient in the Trendelenburg position, and inserted a Thomson-Walker retractor. I found that the internal meatus was greatly contracted, so, while my assistant pushed up the metal bougie, I cut away the intervening tissue with scissors until the instrument entered the bladder. The bougie was then removed, and I completely dissected away the partition between the vesical and prostatic cavities, leaving a large internal meatus. I then passed a big coudé catheter along the urethra, fastened it into the bladder and closed the vesical and abdominal wounds around a small suprapubic tube, which was removed three days later.

The bladder was irrigated with boric lotion and the catheter changed daily for a week, the urethra being irrigated as the instrument was withdrawn. On the eighth, ninth, and tenth days I passed a catheter in order to irrigate the bladder, but did not tie it in. On the eleventh day, when the urethra had had three days' rest, I again fastened a catheter in and continued to do so till the seventeenth day, when the wound was firmly healed and the patient passing urine more freely than for years previously.

I have seen him from time to time since, and introduced urethral instruments with a view to ascertaining whether there was any contraction at the bladder neck. Large coudé catheters pass without meeting any obstruction, and micturition is free.

CASE II.

In November, 1924, I was asked to see a man, aged 65, suffering from retention, who gave a history of slight difficulty for about a year and great difficulty for two or three months. By rectal examination both prostatic lobes were moderately enlarged but of uniform consistency. I passed a catheter and emptied the bladder gradually.

I performed a prostatectomy by the Freyer method as in the former case, the enlargement being hard, fibrous, and difficult to remove. Great care was taken to divide any shelf between the prostatic and vesical cavities, and the patient convalesced normally for some time, passing urine by the urethra at stool on the eleventh day. Three days later, and many times afterwards, he micturated independently of defaecation.

On the twenty-second day I found that I could not pass a catheter into the bladder, the point being arrested in the prostatic cavity. Only a small quantity of fluid could be introduced and that very slowly. I tried again on many subsequent occasions, always with the same result. Five weeks after the operation, when I was out of town, the suprapubic wound closed and the patient developed retention. The medical man who was called to see him passed a catheter. He thought the instrument was in the bladder when it was really only in the prostatic cavity, a mistake easily made in these cases. As he could not draw off any urine, he came to the conclusion that he had to deal with a case of suppression, and actually applied the treatment for that condition. After a short interval, however, the suprapubic wound burst open again and discharged a large quantity of urine.

I explored the vesical neck in the way already described, but after a thorough examination failed to find any opening. I completely removed the partition between the prostatic and vesical cavities, inserted a catheter into the bladder by the urethra, and treated the vesical and abdominal wounds as described above. The technique of the after-treatment was the same as in the former case. The patient made a rapid and uninterrupted recovery and has since passed urine without any difficulty.

CASE III.

A man, aged 50, who had been leading a healthy country life, consulted me in April, 1925. He looked very fit, but complained of slight difficulty for four or five years and great difficulty for a month. He was passing small quantities of urine every hour both by day and by night. He found it very hard to begin the act, and the stream was a mere dribble. There was no haematuria, no sign of infection, and no history of gonorrhoea. The eye and knee reflexes were normal. On rectal examination the right lobe of the prostate was definitely enlarged, the left little, if at all. I passed a catheter, after meeting some obstruction in the prostatic region and drew off 6 ounces of residual urine.

I performed prostatectomy by the open method, as recommended by Sir John Thomson-Walker, and again found great difficulty

of infection believed to be of considerable importance is the water tapped underground on the mines, which many natives, despite warnings, persist in drinking. The same applies to the industrial water used for washing down stope faces, etc. Though they may not actually drink this water they see no objection to storing it in their mouths for lubricating the holes they are drilling. Carriers constitute a great difficulty. An attempt is being made to search for these among all the natives who come into contact with food supplies in the compounds; but it is questionable whether the single examination of urine which is suggested will be sufficient.

A very remarkable feature of the disease among natives is that quite frequently a perforation will actually occur before the man feels sufficiently ill to report at the hospital. In one case of sudden death the district surgeon, finding *post mortem* a perforation with its accompanying peritonitis, suspected neglect, until it was proved to him that the native had done a full shift of work the day before and regularly for a week before that. Once a native was picked out with a perforation and peritonitis from amongst a group of discharged "boys" (all male natives of whatever age are "boys"); he was awaiting his turn to be passed out to go home to his kraal. He died in hospital within twelve hours. Most mine medical officers are familiar with such cases, which, with the native's habit of occasional defaecation and promiscuous urination underground and on the surface, must contribute considerably to the spread of the disease.

Differences in the symptoms from those observed amongst whites are of interest. Petechiae are of very little importance in diagnosis. They are difficult to recognize on the dark skin, and the native is very liable to various sweat rashes produced by the combination of moisture and heat obtaining underground. Loss of appetite apparently never occurs. The native is always a hearty eater, and must be extremely ill before he turns away from a good meal. That he has lost his appetite is not a confession that a native has been known to make. Splenic enlargement cannot be used diagnostically, for the reason that many natives, particularly those from East Coast tribes, are impregnated with malaria and have chronically enlarged spleens. Phlebitis ("enteric leg") occurs, but not so frequently as in whites. This is in keeping with the rarity of varicose veins amongst mine natives; their venous systems are in good order. The diagnosis must be reached by a process of elimination, with the temperature chart alone pointing the way; and here, also, complications are caused by certain undulant fevers common to most tribes, but particularly the Xosas, probably lice-borne infections. The Widal test is negative as often as positive, even when taken two or three times in cases of undoubted enteric.

Prognosis is graver than in whites, which is to be attributed very largely to the fact that the patient presents himself so much later in the course of the disease. On the East Rand Proprietary Mine the mortality during five years has averaged 33 per cent., never falling below 21 per cent., while at Randfontein the average is even higher—47 per cent., never falling below 33 per cent. This is in very strong contrast with the hospital mortality of 7 to 20 per cent. quoted by Osler.

From time to time prophylaxis has been considered; but the unfortunate mine native already has to undergo much in the way of vaccination and inoculation, and mine medical officers are loath to add further to his discomfort. Apparently there are difficulties in the way of combining the pneumococcal vaccine with T.A.B.

Medicinal treatment runs on the same lines as for whites. Dietetically there is the difficulty of overcoming the reluctance of the native to undergo what he looks upon as a process of starvation. "Laparotomies for perforation have small chance of recovery, as the native can seldom be made to see the necessity for an operation unless he is suffering great pain, and in any case he wants a day or two to think it over, and discuss it with his brothers. Even if you obtain his consent early he still may die, and his brothers have been known to raise a riot in a compound and go on strike because their brother went into hospital with only a headache, and died because his abdomen was cut open."

Reports of Societies.

THE FUNCTION OF THE TESTES.

AT a meeting of the Section of Urology of the Royal Society of Medicine, held on May 27th, Mr. T. E. HAMMOND (Cardiff) read a paper on the function of the testes after puberty.

After referring to the difficulties experienced in proving whether any changes had occurred, Mr. Hammond gave an account of seven cases of castration in which both testes had been removed for tuberculosis. In none did any reversion to the so-called neutral type take place, and sexual desire and power was retained for some time. He believed that many current views about the function of these glands were based on ideas handed down from the past. He referred to the influence which sex worship had played among all nations, and said that the stigmas fastened upon the eunuchs were not necessarily due to the absence of testes. Eunuchs were in power in the Roman Empire at times that were characterized by debauchery and licentiousness, which prevailed among all the people. Many of the failings of eunuchs at that time were to be attributed to their Oriental extraction and to their upbringing; for character depended more upon heredity and early training than upon an internal secretion. They had been denounced by Gibbon, who seemed to believe that "testes make the man"; in this respect he might be looked upon as a forerunner of the rabid endocrinologist of to-day. In Mr. Hammond's opinion the work of Brown-Séquard had been given too much prominence. The preparation of the testicular extract was not difficult, and, as a hypodermic injection required but little skill, the fact that Brown-Séquard's results had not been obtained by others seemed to be conclusive that the improvement in his cases was due to suggestion. Whenever any effect followed castration in man, it was always attributed to the loss of an internal secretion. The possible action of shock from the operation and the effect of a deformity and loss of power had been ignored. That these factors might have some influence was illustrated by cases that were recorded. As enlargement of the prostate was often associated with impotence or increased sexual desire; these conditions had been attributed to changes in the testes. The urinary symptoms were always regarded as secondary to the prostatic enlargement. In the same way the sexual symptoms were explicable, if they were regarded as secondary to the pressure of the enlarged prostate upon the ejaculatory ducts. That the increased sexual desire was really a sexual irritability was shown by the fact that no relief followed coitus. It was responsible for many of the sexual aberrations seen in elderly men who had previously lived moral lives. In recent years the functions of the testes had received much prominence owing to the claims of Voronoff and Steinach for the rejuvenating action of these glands. In Mr. Hammond's opinion their practice was based on erroneous deductions, and their findings were not conclusive. When the therapeutic activity of the internal secretion of the testis was investigated it would be found that, no matter how the treatment was applied, successes always followed. The affections treated were most varied in their pathology and causation, and were as numerous as those put forward by Coué as suitable for auto-suggestion. Such claims followed all new methods of treatment, and were due to the failure to appreciate a fundamental principle—namely, that with all therapeutic measures faith and hope were of primary importance; but in the process of rejuvenation the greatest factor was not vasectomy.

Mr. Hammond's conclusions were as follows: For years it had been held that without testes no impregnation could take place; and from his series of cases it appeared that this still held true. The power attributed to the internal secretion was probably overestimated. The internal secretion was probably essential for the true development of the secondary sexual characters; when once these were formed, removal of the glands led to but little change. It had some action in stimulating sexual desire and power. It probably had some action upon metabolism,

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CARCINOMA OF THE PROLAPSED CERVIX.

WE are indebted to Dr. Leith Murray for directing our attention to the extraordinary rarity of this condition. Procidentia is practically confined to women who have borne children—not so much to women who have had hard labours as to women who have had successive pregnancies so rapidly that the uterus has never had time to get back to its normal post-partum size. Carcinoma of the cervix is also admittedly most common in women who have borne children, especially where the cervix has been lacerated in the process. Yet these conditions, individually common in the same class of case, very rarely coexist. It seems, therefore, that cancer is less liable to develop in the prolapsed cervix than in the non-prolapsed, otherwise the associated condition would be more frequent. Perhaps the character of the epithelium changes, making it less liable to a proliferative change. The following two cases may be worth recording. The first case shows carcinoma associated with prolapse, and the second case carcinoma developing soon after a long-standing prolapse was rectified.

CASE I.

On July 22nd, 1922, I was called to see a widow, aged 72 years, who complained of abdominal pain. Whilst palpating the abdomen I found that the uterus prolapsed for about 3 inches outside the vulvae. The cervix was a fungating, foul-smelling, cauliflower-like mass. She had kept the condition secret even from her own family, and she admitted that, although the prolapse was of thirty years' standing, the actual ulceration had existed for only two or three months. She had six children, all alive, and she had been a widow for five years. She was admitted into the Skipton Hospital in August for operation. Mr. Carlton Oldfield of Leeds saw her, and advised vaginal hysterectomy, which he performed on August 26th. She was discharged on September 25th, 1922, and remained quite well until September, 1924. She died on September 20th of that year, of cardiac disease, having shown no sign of recurrence of carcinoma.

CASE II.

A widow of 53 had had four children, the youngest aged 26 years. Her prolapse dated from soon after her last confinement. There was no sign of old laceration, but there was a certain degree of superficial soreness of the cervix due to friction. The uterus could easily be replaced but not retained in position. She was admitted to hospital, and the inflammation of the cervix rapidly disappeared with rest and local treatment. There was no suspicion of carcinoma. An operation for perineal repair, along with ventral fixation, was decided upon, and this was performed on January 28th, 1914. She was discharged on February 28th, 1914. She enjoyed perfect health, and was most comfortable for the twenty months that she remained under my care. She then removed out of the district, but came back to see me early in 1917 complaining of a sanguineous vaginal discharge of two months' duration. Examination revealed inoperable pelvic carcinoma, apparently originating in the cervix uteri.

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HAEMATOMA OF THE ABDOMINAL WALL.

DR. FOTHERGILL'S lecture on this subject, reported in the issue of June 5th (p. 941), covers many interesting aspects of a condition which has received very scanty consideration in surgical literature, apart from the recording of isolated cases. From the point of view of diagnosis, the presence of a haematoma in the abdominal parietes undoubtedly presents many difficulties, and it is especially, I think, when the condition occurs suddenly and acutely that the uncertainty in differential diagnosis between an intraperitoneal and extraperitoneal catastrophe arises. It seems to me (albeit from a somewhat meagre experience) that there is room for the inclusion of this condition in classifications of the differential diagnosis of acute abdominal conditions.

One case I have particularly in mind which, owing to the dramatic suddenness of onset and the exquisite tenderness associated with the swelling, made diagnosis almost impossible, short of surgical intervention.

Mrs. D., aged 83, was admitted to the Bolingbroke Hospital, S.W., complaining of intense abdominal pain. She was pale, collapsed, and in very obvious distress. The pulse was poor in volume, irregular, and the heart sounds faint. She gave a history of having, in the middle of a game of cards, gone to a cupboard to take out a joint of meat, and, whilst lifting it out, was overtaken by violent abdominal pain and the sudden appearance of a lump in the lower quadrant of the abdomen. The rigidity of the abdominal wall made palpation very difficult, but the presence of an ill defined tender mass in the left hypogastric region, filling the left iliac fossa, was obvious. It was apparently fixed and hard, with a definite, though irregular, edge.

Both recti were rigid. It was difficult to exclude such conditions as torsion of the pedicle of an ovarian cyst, or of the left kidney or spleen, although actually the shape and position of the tumour negatived all these possibilities.

The swelling resembled nothing that one associates with abdominal viscera. The acuteness of the condition, and, partly, the uncertainty of diagnosis, were considered sufficient to make exploration advisable, in spite of the fact that the patient had been under treatment for several months for auricular fibrillation and chronic asthma and was therefore ill suited for the administration of a general anaesthetic.

Through a paramedian incision, under light ether anaesthesia, I opened the peritoneal cavity and found to my surprise a perfectly normal state of the abdominal viscera and the absence of anything like an abdominal tumour. Further dissection in the parietal wall opened into a large haematoma deep to the left rectus, burrowing between it and the posterior layer of the sheath, and also exposed some torn fibres of the rectus muscle itself. After turning out clot and employing a few deep haemostatic mattress sutures through the rectus the abdomen was closed. Recovery was uneventful and rapid.

Apparently in this case rupture of a segment of the rectus abdominis itself, together with some muscular branches of the deep epigastric artery, had occurred in a frail old lady after a slight effort.

I have notes of four other similar occurrences following some sudden effort, such as vomiting, coughing, etc.

The acuteness of the general condition, associated with pain and an abdominal tumour, serves to show the difficulty which exists in making a diagnosis, and seems to me to emphasize the desirability of remembering the possibility of such an occurrence and of distinguishing it from an acute intraperitoneal emergency.

Altrincham, Cheshire. H. H. GELLERT.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

WITWATERSRAND BRANCH.

TYPHOID FEVER: MANIFESTATIONS AMONG SOUTH AFRICAN NATIVES.

AT the meeting of the Witwatersrand Branch of the British Medical Association on May 20th, held in the lecture hall of the Associated Scientific and Technical Societies Club, a discussion took place on enterica. Dr. A. J. MILNE (M.O.H. Johannesburg) contributed a paper on the public health aspect; Dr. A. BLOOM on the clinical aspect and treatment; Dr. M. BLIEDEN on manifestations peculiar to children; Dr. A. S. STRACHAN on the pathology and bacteriology; and Dr. A. FREW communicated a paper by Dr. H. T. H. BUTT and himself on manifestations peculiar to natives. Both can speak with special authority, as each has under his medical care large numbers of mine natives: the former being medical officer to the East Rand Proprietary Mines, Ltd., the latter to the Randfontein Estates Gold Mining Co., Randfontein. The experience of Drs. Frew and Butt is necessarily derived from adult male natives, which somewhat limits the possibility of comparison with whites. Nevertheless they were able to give a very interesting account (summarized below) of the disease as it occurs among the natives on the mines.

In the first place it is to be assumed that typhoid fever occurs in the native territories, as a fair number of natives arrive on the mines with the disease developing or already developed. As to the mines themselves, on some the disease is more or less endemic, with occasional outbreaks that may be described as epidemic. Amongst the 10,000 natives on the East Rand Proprietary Mines during 1922-25 no case was recorded in seven of the forty-eight months; at Randfontein, with 16,000 natives, no case was recorded in eighteen months of the same period. On the East Rand Proprietary Mines the successive annual figures were 42, 46, 40, and 38. At Randfontein they were less uniform—namely, 9, 45, 21, and 36. The prevalence is greatest on the mines with the bucket sanitary system. One source

he did not consider that these results offered any insuperable objection to his view.

The fundamental nature of kidney activity has been the subject of controversy for more than half a century, and it is unlikely that Cushny's theory represents the final and absolute truth. It is, however, the first coherent theory of kidney secretion which accords with most of the known facts; it has also the merit of simplicity. Considering the rapidity of the present advance in physiological knowledge it is very satisfactory that the theory should have stood the test of ten years so well.

The first edition of this book was recognized as the clearest summary of our knowledge of the difficult subject of kidney secretion that had appeared, and this new edition fully maintains the reputation of its predecessor. The sudden death of the author in the prime of his life is an irreplaceable loss to medical science.

MALIGNANCY AND EVOLUTION.

IN his latest book, *Malignancy and Evolution*,[2] Mr. MORLEY ROBERTS sets out to justify the claims of philosophy as an engine of research and, at the same time, to plead earnestly for the restoration of the philosopher to a recognized place among scientific workers. Without laboratory training, and dependent for his facts on others, he nevertheless handles his tools as if he had been accustomed to them from youth upwards. In this dexterity Mr. Roberts stands almost alone among "outsiders." There are numerous examples of medical men and of biologists who have turned from medicine and from science to fiction and to letters, but in turning from fiction, letters, poetry, and painting to sound the depths of modern biology Mr. Roberts has broken all precedent. If we follow him through his later work we see him becoming more and more involved in the deeper problems of life, and it becomes plain that he is really a man of science who sought for expression through the medium of fiction and of narrative. He had reached mid-life before he turned to the writings of scientific men in search of facts which would assist him in unravelling the intricacies of human nature and of human behaviour, especially as manifested under the conditions imposed by modern civilization. He studied works on sociology, then on psychology, and later, still in search of further light and to serve him as a portrayer of human life, entered the great fields of general biology. He there came to perceive for himself that the animal body—and it was man's body on which he concentrated his attention—was in reality a colossal society of microscopic units.

It detracts in no wise from the merit of Mr. Roberts's intuition that Herbert Spencer had made the same discovery fifty years before him. Like Spencer, Mr. Roberts soon realized that the student of human societies had little or nothing to learn from the professor of biology, but that, on the other hand, the sociologist could provide effective assistance to the professed biologist. The size of the living units which make up a society, Mr. Roberts declared, is immaterial; they may be microscopic in size or they may be as big as elephants; if they are massed into societies there must be an elaborate machinery for the regulation of the conduct of each individual of that society. The rules and conditions which regulate human society are recognized; there must be, Mr. Roberts inferred, a corresponding, if more elaborate machinery for regulating the behaviour of the uncountable millions of units which make up such a vast society as that represented by the human body. He therefore, at an early date, commenced the search of physiological literature for evidence of this machinery; the nervous system was recognized, as it had been by previous inquirers, as representative of central government; the discovery of hormones, the action of endocrines, the results obtained by experimental embryologists, and effects produced by one tissue on another when grown in experimental cultures and the stimulating effect produced on such cultures by embryonic juice, came, all of them, as grist to his mill. He searched the literature dealing with immunity, with repair, with atrophy and hypertrophy, and with the formation of tumours of all kinds, to see if any parallel were to be found to the conditions which produce rebellion and disorganization in human societies. The process of invasion, the outstanding feature of all malignant tumours, was, he found, present in all living societies. The invasion of one tissue by another is manifested at every stage in the development of the embryo; it is a part of Nature's evolutionary machinery and by no means restricted to the manifestations of malignancy. He has ransacked the literature of evolution and of genetics for conditions which produce structural and functional changes in the animal body, leading on to the modification of one species and the extinction of another. He gives his reasons for believing that pathological stresses and processes are normal parts of the machinery of evolution. Tumour formation, in Mr. Roberts's opinion, is both normal and physiological, for he regards the liver, the pancreas, and every organ in the body as having come into being as a developmental or physiological tumour. The origin of cancer he regards as the same problem as the origin of the placenta; if we could ascertain the conditions which cause the liver to grow out, tumour-like, from the duodenum, we should probably be in a position to explain the origin of an enchondroma growing from the end of the femur. All are but variations of the same problem—the problem of growth. Whoever discovers the machinery of cancer production will, at the same time, throw a flood of light on the machinery of growth—for that which serves the one is the same as serves the other.

Thus the conversion of Morley Roberts the novelist into Morley Roberts the biologist has not been by way of sudden mutation, but by a process of gradual evolution. He strayed into the biological fold in search of facts to aid him in elucidating sociological problems; he ultimately pitched his tent within this fold to apply to the problems of biology his sociological doctrines or laws. In *Warfare in the Human Body* (1920) he enunciated his sociological doctrine of "hostile symbiosis"; in *Malignancy and Evolution* this doctrine is applied to the explanation of all disorders of growth and development, particularly to the elucidation of cancer and of sarcoma. Hostile symbiosis is a basal law, he maintains, in all massed communities. Even in the best ruled and most law-abiding society there is ever a rivalry of interest and an unceasing "give and take" on the part of the sections of the community which represent these divergent interests. Even the best of neighbours in the best regulated municipalities have steadily to maintain their rights, tacitly or openly. We may live like gentlefolk, yet we cannot be units of a society unless we are "hostile symbiotes." The relationship between a living cell and all its equally living neighbours, Mr. Roberts maintains, is of the same kind: the epithelium which covers the skin is ready to take advantage of any weakness on the part of its mesoblastic neighbours which make up the underlying corium. Between neighbouring cells and between neighbouring tissues there exists, throughout the entire body, an armed neutrality or hostile symbiosis. Without such a state of matters there could be no adaptation to environment and no evolution of new forms. Thus tumour formation, benign and malignant, is just such growth reactions as are to be expected if Mr. Roberts's theory of hostile symbiosis is right. They are such manifestations as are to be expected if the government of the body fails—the government represented by the nervous system, the endocrines, and those more primitive and numerous substances to which Mr. Roberts gives the name of eo-endocrines. Local tissues, he holds, are always ready to break through their normal bounds, being stimulated thereto by excitants or irritants, which may take many forms—micro-organisms, radiations, toxic substances, or growth-promoting bodies introduced from without the body or manufactured within its tissues. Mr. Roberts succeeds in fitting all manifestations of growth, ordered and disordered, within his philosophical scheme of biology. It is a book which the professed biologist and pathologist should not pass by unread.

[2] *Malignancy and Evolution: A Biological Inquiry into the Nature and Causes of Cancer.* By Morley Roberts. London: Eveleigh Nash and Grayson, Ltd. 1925. (Demy 8vo, pp. viii + 319. 18s. net.)

as shown by the tendency to obesity after castration. It might have some action upon that elusive condition known as general tone. It had not that action upon the mental and physical well-being which had in recent years been claimed for it.

AMENTIA AND CRIME.

THE annual meeting of the Medico-Legal Society was held on June 15th, with the President, Lord Justice ATKIN, in the chair.

Sir JOHN COLLIE read a paper entitled "A study from a medical and legal point of view of the case of John Perry, executed in 1660." William Harrison, aged 70, steward to Lady Campden, set out to collect rents, and, failing to return, his servant, John Perry, was sent in search of him. Later, Perry made a "confession" implicating his own brother, Richard, and his own mother, Joan, in the murder of Harrison. Although the body of Harrison was not recovered, the three were tried for murder before Sir Christopher Turner at Gloucester Assizes, but the judge refused to convict in the absence of direct proof of death; at the following assize, however, Sir Robert Hyde sentenced the three Perrys to death. To the end the mother and Richard protested their innocence. Sixteen years after the executions Sir Thomas Overbury sent to Dr. Shirley, physician to Charles II, a signed statement by William Harrison, who had returned to his native village sixteen months after the executions, detailing his seizure by highwaymen on the night of the murder. He never saw the Perrys at all.

The fatal error in the case was conviction in the absence of recovery of the body. As to the medical side of the case, Sir John Collie did not believe that any sane man would simultaneously commit the crimes of matricide, fratricide, and suicide. Was John Perry a mental defective? Amentia was more common than was generally supposed. It had been estimated that 20 per cent. of our prison population showed the stigmata of mental deficiency. Tredgold's investigations in Somersetshire led him to conclude that 10 per cent. of mental defectives evinced antisocial tendencies. Many aments could do fairly complicated work, with or without supervision. They could, for instance, take care of animals, but they could not plan. All aments might be divided into two classes—those who lacked wisdom (that is, common sense), and those who lacked moral sense. The first were defective in will power, "facile," wanting in character, unduly amenable to suggestion, and dependent on their environment. They made a living in humble vocations, but they could never control others. They jogged along, or gravitated to a home for defectives or to prison. Those who lacked moral sense did not always lack wisdom, and were, therefore, of greater potential evil to the State. Serious misconduct was one of their chief characteristics. In children it was sometimes difficult to recognize whether the defect was more moral or intellectual. If the children escaped segregation when young, later in life they might exhibit their fatal defect in some cold-blooded murder or terrible crime. This moral insanity was sometimes, apparently, latent, and only awaited its opportunity. Sir John Collie thought that many of these crimes lay at the door of the newspaper proprietors. The lurid details of one crime led in time to others. A visiting J.P. to the Glasgow prison told him that, being struck by the refined physiognomy of one prisoner, he asked him who he was. The reply was, "Hush! I am Morrison." It was a case that had made some little stir; the man had been sentenced to ten years' penal servitude for embezzlement, and seemed proud of it. In a similar case at Broadmoor the man who had committed a terribly cold-blooded murder posed as a hero, proud of himself. The prison doctor, when asked what was the form of mental disease which had saved the man from the gallows, replied, "Moral insanity." If John Perry was a moral defective, why was this defence not set up at his trial? The answer was that the tragedy occurred in 1660, and that even in 1926 such a plea might not always be successful. If Perry was sane he knew he was innocent, and also that his mother and brother were innocent. It might be argued that Perry was an hysteric. But hysterics scarcely ever came to any harm. The hysterical state would not have lasted so long, and, if present, would not have remained so long unchanged. Had it been an hysterical condition Perry would have broken down either at the trial or at the executions. Again, it might be that Perry suffered from delusional insanity. If this were so his story would have varied much more than it did, and it certainly would not have stood inquiry or cross-examination. After a time Perry thoroughly believed the story he had evolved—it became a true delusion. Lastly, was Perry suffering from dementia praecox, which was most common between the ages of 15 and 30? Perry's story was a typical phantasy, like the charges which girls sometimes made of having been assaulted. It was typical of dementia praecox that its victims were emotionally apathetic. Could apathy be more callous and inhuman than to condemn a mother and a brother to a horrible end and be quite regardless of their appeals? Sir John Collie inclined towards the diagnosis of "moral insanity," but he had not arrived at a definite conclusion.

Sir HARRY STEPHEN said that the story depended greatly on the truth of Overbury's letter to Shirley. Did Harrison really come back? Did Harrison really suffer as he alleged, or was it a put-up disappearance whereby Harrison's son should step into his father's shoes as steward to Lady Campden? The speaker said he always distrusted "confessions." Further, he did not think it always necessary to produce the body where a murder had been committed before a sentence could be passed. Crippen was convicted after a mere fragment of skin had been found.

Lord Justice ATKIN said he had made inquiries at the Record Office, and the assize clerk had, he observed, made an entry against the names of the Perrys: "puts," that is, "puts himself on the county," which meant trial by jury, and "sus," that is, suspended, or hanged. Perhaps research in the parish registers of Campden and Bourton might elicit further facts concerning what he considered "our most horrible judicial tragedy."

Mr. BERNARD O'CONNOR, Dr. WATSON, Mr. ROLAND BURROWS, and Miss LETITIA FAIRFIELD also took part in the discussion.

Reviews.

THE SECRETION OF URINE.

THE second edition of *The Secretion of the Urine*,[1] which has just appeared, was almost the last work Professor A. R. CUSHNY did, for he had just completed the revision of the proofs at the time of his sudden death early this year. The first edition of the book appeared nine years ago, and during the interval a considerable amount of research work has been done on the subject, although no very revolutionary discoveries have been made. The present edition gives a full account of all this recent work, but the author concludes that the general result of the work done during the last decade has been to confirm the theory of urinary secretion put forward in the first edition of his book. This theory supposes that the glomeruli act as filters, filtering off the non-colloidal constituents of the plasma, and that the tubules absorb from this filtrate a fluid of practically fixed composition. As a result of this mechanism some substances have no threshold and are entirely excreted, while others have a high threshold (for example, sugar) and normally are entirely reabsorbed, while most substances lie between these extremes and are excreted in varying amounts.

It is pointed out that the experiments of Wearn and Richards, who succeeded in actually tapping the glomeruli of the frog's kidney with fine capillaries, and in analysing the minute quantities of fluid thus obtained, provide direct evidence for the view that the glomeruli act as simple filters. The experiments of Starling and his co-workers on the heart-lung-kidney preparation of the dog, on the other hand, are difficult to explain on Cushny's theory, though

[1] *The Secretion of the Urine.* By Arthur R. Cushny, M.A., M.D., LL.D., F.R.S. Second edition. Monographs of Physiology. London and New York: Longmans, Green and Co., Ltd. 1926. (Med. 8vo, pp. xii + 238; 39 figures. 16s. net.)

PREPARATIONS AND APPLIANCES.

Preparations for Cholecystography.

THE discovery by American workers that the gall bladder could be rendered visible to x rays by administration of tetra-iodo-phenolphthalein provided a valuable new method of diagnosis for use in disorders of the gall bladder. At first it was believed to be necessary to give the drug by intravenous injection, but it has since been discovered that almost equally satisfactory results can be obtained if it is given by mouth, provided that it is administered in a capsule, which protects it from the action of gastric juice. This represented a great simplification in technique, and the method is now firmly established in many hospitals.

The British Drug Houses have undertaken the manufacture of tetra-iodo-phenolphthalein and tetra-bromo-phenolphthalein. They supply these drugs in solid form, in solution for intravenous injection, and also in gluten-coated gelatin capsules for oral administration. The dose for intravenous administration is about 3.5 grams, and for oral administration 5 grams. The price of such doses is between 2s. and 3s.

Nova et Vetera.

DALTONISM AND THE ARTS.

IN a leading article on colour-blindness in our issue of May 29th (p. 910) we commented on Part II of the Nettleship Memorial Volume of the *Treasury of Human Inheritance*, and Dr. Julia Bell's excellent work on this subject was commended as it deserved. Space forbade any digression into a consideration of the disabilities under which the subjects of dichromic vision suffer, but this branch of the subject is so interesting as to invite discussion, and especially as regards the obstacles which dichromism puts in the way of the painter. To this subject not much attention has been paid by medical writers, yet it is an interesting one.

In 1871 Dr. Liebreich noticed a strange-coloured picture in an exhibition in London. The subject of the picture which attracted his attention was a cattle market. The roofs of the houses and the oxen and cows were painted red in the light and green in the shadow, and from its peculiarities he inferred that the painter was a Daltonian—that is to say, that he suffered from defective sensitiveness for the colours red and green, and from that cause he used these colours in the place of the grey which to him was indistinguishable from red and green except by difference of illumination of the shades in question. Liebreich does not appear to have had an opportunity of verifying his diagnosis by examination of the painter's colour-vision, and it was not till 1908 that a paper was published by Professor Angelucci of Naples[1] in which a number of examples of colour-blindness in painters were cited, in whom the condition had been demonstrated by tests with Holmgren's wools.

Professor Angelucci found that the peculiarity noticed by Liebreich was so constant in the works of Daltonians that he proposed to call it "Liebreich's sign," in honour of its discoverer. Not only did he detect and examine a number of Daltonian painters in Italy, but he formed a collection of paintings by those artists in whom he had established the fact of their defect by the usual tests. Some of these paintings were commissioned by him, and at the same time for comparison he had paintings from the same subjects executed by other painters whose colour sense was known to be normal. It appears probable from his account that some of his patients, if they may be so called, had defects of colour vision more extensive than mere Daltonism, but with this consideration he did not deal.

The diagnosis of Daltonism from the examination of a painting is made more difficult by the fact that after some years' experience its victims learn to know the names of the colours of many objects and employ pigments which are similarly labelled, but this resource is apt to fail in the case of a mixture of colours. One at least of Professor Angelucci's patients attempted to get over this difficulty by buying paints of blended tints ready made. But do what he will, it appears that the Daltonian cannot avoid making the mistake which constitutes Liebreich's sign. Pastel offers greater difficulties than oils, because the crayons are not labelled with the names of their tints, and this much annoyed one of the artists who had to a great extent evaded his difficulties in oils in the way just indicated. The statement quoted in our leading article of May 29th that dichromic vision is frequently associated with perfectly normal vision for form confirms Dr. Angelucci's experience. Some of his cases would have been in the first rank of skilful technicians but for the quaintness of their colour schemes. Such artists are well advised to restrict their activities to black and white or monochrome.

A somewhat cursory survey of the 845 pictures in oil and water colours now on view at Burlington House did not afford a definite case of Liebreich's sign. To the mere physiologist who is not a painter or an art critic, a certain number of exhibits appear to be freakish as regards their colours, without betraying the definite stigmata of dichromism. Certain landscape painters appear to eschew contrasts of colours or even of shades to such an extent that some of them are obliged to emphasize the outlines of objects with lines of a deeper tint, with the result that the general effect is one of a coloured drawing. There seems no ground for accusing such painters of defective colour vision, for the low tones may be only the expression of the artist's preference; yet it is hardly possible to believe that the colours of a landscape in Spain or Italy are appreciated by them, as they are by most other persons. Some of these pictures give one the impression of having been painted during a partial eclipse of the sun. The use of green in the shadows, which Professor Angelucci associated with undue redness of the high lights, seems to be a favourite with some exhibitors. The subject, however, is a little complicated by the fact that some painters make use of special conventions to produce on the eye of the beholder the massed effect they desire. Thus in the white horses which are represented in the works exhibited by Mr. A. J. Munnings, R.A., bright grass-green is thus employed, and in one case sky-blue. The last picture is subdued and low in tone and contains scarcely any red, but the "Gypsies" on Epsom Downs and the Ascot pictures are full of bright colours. In No. 97 there is light green in the shadows of the King's face and in the Queen's hair, and the under surface of the black carriage front which is in shadow is painted with much green. Perhaps to the amateur eye the most surprising use of colour is seen in the front of the wheeler postilion's jacket in No. 406. Although in the bright light of the open sky, it is in shadow compared with the other side. Here the colours used on the gold-laced scarlet jacket are green, yellow, and (in the shaded arm) puce-purple.

We do not venture to criticize the use of these colours by an artist of Mr. Munnings's experience and distinction, but we mention it as an example of the wide differences which may exist between the impressions recorded by the eye of the painter and that of the man in the crowd. In No. 203 another artist has represented a scene containing much colour, but the linings of the monks' brown hoods, apparently intended to be white, are bright green, and the paper on which the hand of one rests is grass-green. There are a few other pictures in which light or bright green is used in the shadows, which need not be here specified.

In his summary Professor Angelucci says that most Daltonians learn how to distinguish red after long practice so that their faults with this colour are less visible, but it is otherwise with green. He thinks that an abuse of the colour violet also occurs. The completely dichromic use it largely in flesh tints, and those who are blind to the half-tones of red and green use it too much in the shadows. Green in the high lights is often rendered by yellow. An extravagant polychromatism is also characteristic of the Daltonian. The existence of so many dichromic painters in Italian art is explained, he says, by the fact that the colour vision of students was not tested. Had they been properly examined many of the pictures in his collection would not have existed. We have not heard of any such test in the schools of painting in this country. If the distinguished professor of anatomy to the Royal Academy of Arts were to examine the colour vision of the Academicians, Associates, and students of that august corporation the results might be interesting.

[1] Les Peintures des Daltoniens. Par le Prof. A. Angelucci, de Naples. *Recueil d'ophtalmologie*, 3e série, 30e année, No. 12, Décembre, 1908, Paris, p. 1.

POTT'S PARAPLEGIA.

MADAME LE [*sic*] DR. SORREL-DEJERINE is the daughter of one distinguished surgeon and the wife of another. Her husband, Dr. Sorrel, is well known for his work at Berck in the treatment of surgical tuberculosis. At the Maritime Hospital at that place Mme Sorrel has in four years had the opportunity of studying and recording forty cases of paralysis complicating vertebral disease.[3] Of these cases four died, and some of the others left the hospital and were lost sight of. Like previous writers on this subject, Mme Sorrel observes that paralyses are very rarely due to compression by bone, very often to an abscess inside the spinal column, and only sometimes to pachymeningitis. While most cases of Pott's paralysis tend to spontaneous cure, those that are the result of pachymeningitis are not suitable for surgical treatment and very generally incurable. Such cases begin later in the course of the disease, and develop more slowly than do cases of paralysis due to oedema or abscess.

The author thinks that all operative surgical treatment of Pott's paraplegia is useless, but it is to be noted that a number of the cases recorded were treated with Albee's bone grafts. This operation, while it does not directly react upon the paralysis, favourably affects the suppurative process, and may cause relief of pressure on the cord. The anatomical and pathological aspects of the matter are well dealt with in this book, and the considerations which should guide the surgeon in his prognosis are adequately set forth and considered. The illustrations are good. There is no index.

DYSPNOEA.

THE fifth of the "Medicine Monographs" series is on *Dyspnoea*,[4] by Dr. J. H. MEANS of the Harvard Medical School and the Massachusetts General Hospital, Boston, who deals with this complicated subject from a sound physiological standpoint, and endorses Meakins's definition of dyspnoea as "the consciousness of the necessity for increased respiratory effort." The causes of dyspnoea are considered to arise at various points in the chain of events which keep the tissue cells in an environment best suited to their normal life. Beginning, therefore, with the basal metabolic rate, the modifications due to exertion, excitement, food, and disease are mentioned, and it is pointed out that in leukaemia the metabolic rate may be as high as in exophthalmic goitre. The laws governing the transport of gases are illustrated by dissociation curves of carbon dioxide and oxygen, and the rate of blood flow both at rest and in work by observations made with Newburgh on the author's own circulation. In the section on the efficiency of the pulmonary bellows the volumes of the anatomical and physiological dead space are discussed and the part played by nervous control is considered. The chapter on dyspnoea associated primarily with increased metabolism deals with the physiological, as in exertion, and pathological forms, as in thyrotoxic conditions.

When dealing with dyspnoea associated primarily with the disturbance of the acid-base balance, the term "acidosis," "much abused not only by clinicians but by physiologists," is defined as a condition in which acids other than carbonic are present in the blood in excess of their usual concentration. The diabetic patient with acidosis rarely has dyspnoea, at least when at rest, and may manifest pure hyperpnoea as in a normal person in moderate exercise; a nephritic with acidosis is, from the frequency of some handicap to ventilation, such as pulmonary engorgement or oedema, more likely to have dyspnoea. In 1914 the author confirmed Professor J. Barcroft's proof that acidosis may occur in cardio-renal disease, but found little if any relation between the intensity of the acidosis and the dyspnoea, a discrepancy which may in part be due to changes in the sensitivity of the respiratory centre. The evidence for Haldane and Douglas's view that Cheyne-Stokes or periodic breathing is due to oxygen want is recognized as conclusive, though in discussing cardiac dyspnoea the relationship is stated to be far from simple. The dyspnoea of heart disease and of pneumonia are considered separately; the fundamental fault for the first is obviously failure to maintain the adequate rate of blood flow; in mitral stenosis especially there is stagnant anoxaemia of varying degree due to slow blood flow; in cardiac failure there may be arterial or anoxic anoxaemia due to defective aeration in the lungs; in congenital heart disease the most extreme degrees of either arterial or venous anoxaemia occur, due not to changes in the lungs, such as oedema, as in cardiac failure, but to the cardiac malformation. In pneumonia the factors responsible for dyspnoea are increased metabolism, anoxaemia, perhaps acidosis, and the diminished efficiency of the lungs with restricted vital capacity, necessitating rapid shallow breathing, which is not only uneconomical but may increase anoxaemia.

Some remarks on the treatment of the symptom dyspnoea, based on the known morbid physiology, such as the indications for reducing the metabolic rate by rest, for improving the muscular action of the heart by digitalis, and for promoting gas exchange in the lungs by the administration of oxygen, bring this admirable monograph to a close.

[3] *Contribution à l'Etude des Paraplégies Pottiques.* Par Mme le Dr. Sorrel-Dejerine. Préface du Dr. André-Thomas. Paris: Masson et Cie. 1926. (Roy. 8vo, pp. x + 401; 97 figures. 40 fr.)

[4] *Dyspnoea.* By James Howard Means. Medicine Monographs, Vol. V. Baltimore: The Williams and Wilkins Company; London: Baillière, Tindall and Cox. 1924. (Med. 8vo, pp. 108; 22 figures. 11s. 6d.)

NOTES ON BOOKS.

THE monograph on transfusion of the blood,[5] by Dr. BURGHARD BREITNER, first assistant in Professor Eiselsberg's surgical clinic at Vienna, is in two parts. In the first, which is devoted to the practical side of the subject, the writer discusses the value of transfusion compared with other methods of replacing loss of blood, the determination of blood groups, the dangers of transfusion, the action of transfusion, the various methods, especially those of Oehlecher and Percy, and the indications for the procedure. The second part deals with theoretical considerations connected with blood grouping, including its anthropological significance. The summary of the work is followed by an historical note and an exhaustive bibliography.

An Explanation of Hydrogen Ion Concentration: The Capillator Method for the Determination of Acidity and Alkalinity in General Practice,[6] by Dr. H. A. ELLIS, is a small pamphlet whose purpose is explained by its title. The subject is discussed in very simple language, and it is shown how easy it is to determine the reaction of any body fluid by using a capillator set, consisting of a series of capillary tubes filled with indicator dyes at varying hydrogen ion concentrations; spare tubes and dyes are provided, and by means of this method the reaction of a drop of fluid can be estimated in a minute or two.

The Basis of the Golf Swing[7] is the title of a book by a medical writer, Dr. JAMES FORREST. The author claims, through his knowledge of anatomy, to have discovered the secret of the golf swing, and so to revolutionize the teaching of the game. There is, however, little, if any, reference to anatomy in its pages, and the author's secret is disclosed in a somewhat complicated dissertation on the use of the wrists and the manner in which they should be turned during the upward and downward movements of the club. His theory of the swing and the use of the wrists is, however, well illustrated by numerous photographs, taken at rest and during a swing. Golfers may or may not appreciate his teaching, but the golfer who endeavours to improve his play by considering how his wrists are turning at the proper moment (backwards, forwards, downwards, upwards, to the left or to the right) will no doubt pass through a bad and distracted phase. His condition will not be unlike that of the centipede on being asked which leg went after which!

Volume 50 of the *Transactions of the American Gynecological Society*[8] is edited by Dr. A. H. Curtis and contains the address of the president, Dr. H. C. Taylor, and numerous well illustrated papers on gynaecological subjects.

[5] *Die Bluttransfusion.* By Privatdozent Dr. B. Breitner. Abhandlungen aus dem Gesammtgebiet der Medizin. Vienna: Julius Springer. 1926. (Med. 8vo, pp. 114; 24 figures. G.M.6.90.)

[6] *An Explanation of Hydrogen Ion Concentration: The Capillator Method for the Determination of Acidity and Alkalinity in General Practice.* By Henry A. Ellis, B.A., M.B., Ch.B. Brochure II. London: H. K. Lewis and Co., Ltd. 1925. (Cr. 8vo, pp. 20; 2 illustrations. 1s. net.)

[7] *The Basis of the Golf Swing.* By James Forrest, M.B. London: T. Murby and Co. 1925. (Demy 8vo, pp. xvii+60; 92 photographs. 6s. net.)

[8] *Transactions of the American Gynecological Society.* Vol. 50, for the year 1925. Philadelphia: W. J. Dornan. 1925. (Roy. 8vo, pp. liii + 317; illustrated.)

aseptic surgery. During the last twenty-five years of his life this was the ideal which pervaded his practice and teaching. In one sense he was fortunate beyond many of his fellows, and than most of the younger surgeons of later times, in that he was appointed a visiting surgeon with charge of wards in the Glasgow Royal Infirmary at the very early age of 29 years, when he was full of vigour and enthusiasm, when he had still the freshness of youth and something of its boldness, even of its daring. He played a large part in developing the practical application of Lister's doctrine, and soon his whole operative technique passed from the purely antiseptic to the aseptic. His reverence for Lister and his work remained with him throughout his life.

Professor Young proceeded to make more detailed reference to the work of Macewen. The surgery of bone constituted a large and important part, and probably was nearer his heart than any other of his scientific interests, for he seemed to have had his mind directed upon some aspect of it at nearly every stage of his professional career. His historic case, in which a new humeral diaphysis was built up step by step by a series of heteroplastic transplants, was first operated on by him as far back as 1878, and he was able to follow out the after-history of it for over thirty years. In his book on *The Growth of Bone*, published in 1912, he was able to give a comprehensive description of the process over that long period along with photographs showing the end-result of this great physiological experiment, and to give his conclusions with regard to the regeneration of bone. He was himself the great protagonist for the view that regeneration of bone was the property of the essential bone cell, especially the active or embryonal form of this, the osteoblast. This great and recurring controversy upon the role of the periosteum in bone regeneration was much with him, both in argument and experiment, through the greater part of his active life. His work on bone, however, found a more useful field of application in the surgical treatment of bony deformities. He set himself the problem of devising some method of dealing with the deformities associated with rickets, a disease which was particularly prevalent in Glasgow. This culminated in his work on osteotomy, which was a personal triumph, and Macewen's operation of supracondylar osteotomy ere long became the operation of universal choice for the correction of genu valgum. For the other deformities suitable operations were devised. It was of interest that he also discussed the causation of the malady which led to these deformities, and though his views on the etiology of rickets did not necessarily deal with, or even foreshadow, the more modern views on the biochemical and other agencies to which many now ascribed its production, yet his conclusions as to the influence of bad hygiene, the want of pure air, the absence of sunshine, the effects of chronic ailments, and perhaps of epidemic diseases acting during the growth period, were still worthy of acceptance even in the light of modern knowledge.

Macewen, however, probably achieved his greatest fame as the pioneer of brain surgery. His address in 1888 to the British Medical Association in Glasgow has become historic, and created a sensation throughout the world as "one of the most remarkable contributions to surgical literature which the present day has produced." Thirty-four years later, when the Association again met in Glasgow in 1922, Macewen, now its President, took as his subject of address practically the same theme, its title being "Brain surgery." This was in fact a masterly survey of his own work during that period, of the more recent developments in brain surgery, and also of the great possibilities of the future. Great as was Macewen's work on the surgery of brain tumours and their localization, it was probably true to say that he stood out more clearly as the pioneer in the diagnosis and surgical treatment of intracranial suppurative conditions. His association with the late Dr. Thomas Barr of Glasgow in this work was one of the most fortunate and fruitful associations in the history of modern surgery, as it led to the laying of the groundwork of most of our present-day procedure in the operative treatment of intracranial abscess, meningitis, and sinus thrombosis.

Of Macewen's powers as an operator the lecturer spoke briefly. It could not be claimed that he was an operator of heaven-born genius, or that he was gifted with exceptional manual dexterity. He was, indeed, slower than many surgeons of his day, but he seldom troubled himself about the matter of time. As Patrick had said, "He aimed at thoroughness rather than speed and dexterity." It was probably true to say that in certain branches of surgery Macewen had less than the average facility, and less than the average success, but in those branches of the art which he had done so much to advance, and in which he was the unrivalled master, he was *facile princeps*.

The greater part of Macewen's active work of investigation had been carried out prior to his appointment to the Regius chair in the University. What might be called his creative period had been passed before he turned his mind to the duties of a university professor, but he continued to the end imbued with the spirit of research, though he turned his mind definitely and seriously to the duties of teaching. He was successful in making a deep impression on the teaching of surgery in Glasgow, an impression whose influence was felt far beyond the University. His principle of instruction was to make the student of surgery think for himself, and his métier was as a clinical teacher. His ambition was to establish a great clinical school like that of Kocher of Berne, whose method of teaching was strikingly similar. Macewen always put his professorial duties first and spent much time and energy in preparation. He had strong opinions as to the proper method of training the young surgeon, and opposed strongly any attempt to graft the English tradition in teaching upon that in force in Glasgow. He eventually succeeded in obtaining the institution of a well equipped department for the prosecution of the practical part of his operative surgery course, as well as for the purposes of research.

Macewen (Professor Archibald Young concluded) was a great man—one of the world's great men—but, like many great men, he was not without the defects of his qualities. He earned respect, he excited admiration, in virtue of his energy, his industry, his originality of thought, his brilliant research. He kindled in his students and assistants something of the spirit of investigation with which he was himself so richly endowed, but it was extremely doubtful if he ever could be said to have gained, or even if he ever desired to gain, the affection of those who were his most loyal helpers. But these defects served only to bring into more marked relief the greater qualities of the man whose genius was dedicated for so long to the service of Glasgow University, and of the great surgical school of which Glasgow is proud. Truly, in the possession of Macewen this university and this city had one whose fame was world-wide. His clinic was visited by surgeons from all the world, and at one time, indeed, he was almost better known abroad than at home. Abroad his name was one to conjure with, and on more occasions than one he was strongly invited and urged to accept appointments elsewhere; but though all kinds of lures were held out to him he declined, and persisted in his decision to remain in Glasgow. Surely the loss of others was Glasgow's gain. "We remember with gratitude the life and work of Sir William Macewen. The fruits of his work are with us."

Presentation of the Bust.

Dr. FREELAND FERGUS, the chairman of the Memorial Committee, in asking the Vice-Chancellor (Sir Donald MacAlister) to accept custody of a bust of Sir William Macewen on behalf of the University, said that in response to an appeal issued by a committee which had been formed for the purpose of perpetuating Sir William Macewen's memory in Glasgow a considerable sum of money had been obtained. It had been determined that the money should be applied to three purposes. In the first place, it was decided to procure a bust of Sir William Macewen for presentation to the University, and it was specially desired that this should be placed where it would be seen by future generations of medical students. Secondly, the committee determined that a replica of the bust should be presented to Lady Macewen. Thirdly, the committee had decided that the remainder of the money should be applied to

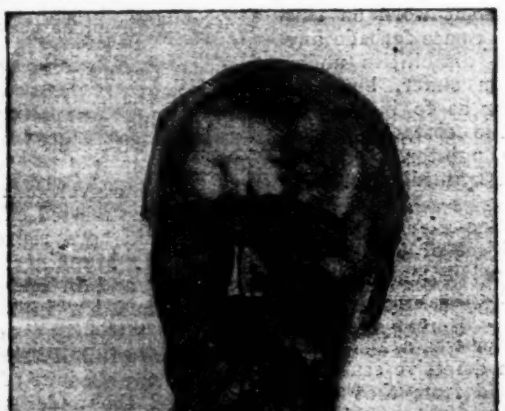
GLASGOW UNIVERSITY COMMEMORATION.

MACEWEN MEMORIAL.

THE celebration of Commemoration Day at Glasgow University on June 23rd was marked by a series of notable ceremonies of medical interest. The chief features of these were the tributes paid to the memory of Sir William Macewen, who occupied the Regius Chair of Surgery for thirty-two years in Glasgow University. It had been originally intended that Professor Harvey Cushing should deliver an oration on the life and work of Sir William Macewen on this occasion, but unfortunately he found himself unable to visit these shores this year. In his absence Professor Archibald Young, successor to Sir William Macewen in the Regius chair, ably carried out the duty, giving in the course of his oration a sympathetically critical analysis of the character of Macewen as presented in his life and work, and offering warm homage to the work of his renowned predecessor and teacher.

The Life and Work of Sir William Macewen.

Professor YOUNG began with the statement that Macewen's life and Macewen's work were synonymous; his life was his work, and his work was his life; throughout his life he seemed to have been actuated by the determination, perhaps hardly formulated in his mind but none the less implicit in his conduct, to devote his great powers unceasingly and without rest to making advance in orderly fashion along the line of progress. This was abundantly illustrated by the remarkable list of Macewen's published works, comprising over seventy separate contributions to the literature of surgery, the greater part of which was made up of papers and monographs of such importance and representing such a mass of scientific research and investigation as might have occupied the time and energy of several earnest workers. He referred more particularly to some of Macewen's larger works, which by their inherent merit, their scientific insight, and the irrefutable demonstration of their teaching, might be said to have established themselves as standard or classical presentations of the particular subjects with which they deal. His treatise on pyogenic diseases of the brain and spinal cord, and his works on osteotomy and on the growth of bone, ranked already as classics. His *Atlas of Head Sections* constituted a contribution to the surgical anatomy of the skull and brain which stood out as a permanent addition to scientific knowledge. This atlas was published in the same year as his great work on pyogenic diseases of brain and cord, only five years after the memorable address on the surgery of the brain and spinal cord which he delivered to the British Medical Association in Glasgow in 1888. During this period also Macewen published a number of notable papers in other departments of surgery, so that this must have been almost the busiest period in his life. In attempting to analyse Macewen's character as presented in his life and work, Professor Young made special reference to several traits which seemed to stand out with special clarity. The first was his infinite capacity for taking pains. No amount of trouble was too great if it meant the possible clearing up of a difficulty or the confirming of an observation. No detail of description, provided it was apposite, was ever wittingly omitted from a report or from an argument. Macewen was as meticulous in testing his tools as he was in verifying his facts. This was illustrated in his monograph on osteotomy and in his paper on chromic gut, its method of preparation and behaviour in living tissues. A further trait was his faculty for taking full value out of every part of his work, in whatever line his energies were employed for the time. This was evident even in the earliest years of his medical life, when, in the course of his routine duties as police casualty surgeon in Glasgow, Macewen made observations on such minor problems as then presented themselves. Thus we have his observations on the diagnosis of alcoholic coma, and on wounds in relation to the instruments which produce them, and a further paper on penetrating wounds of thorax and abdomen. The latter probably had something to do with the direction of his thoughts towards the study of certain problems of thoracic surgery, which were to take more definite shape in the later years. These formed the subject of various papers from time to time, and there would appear to be almost a melancholy interest in the fact that what was probably his last published paper dealt with much the same subject, as in 1923, during his world tour on behalf of the British Medical Association, he delivered an address before the Australasian Medical Congress on the physics of the lungs and pleurae. A third trait in Macewen's character the lecturer referred to without offence as his self-sufficiency. He was not, and could not be, a "co-operator." He had confidence in his own powers, his own resources, and his own judgement. He did not readily accept the judgement of others, and seemed almost to cultivate a spirit of distrust of anything he had not himself put to the proof. Tradition meant little to him; surgical dogma he accepted only where and when his own judgement was convinced by his own observation and deduction. In his teaching of students he encouraged the same attitude of mind, and had much sympathy with what has been called "philosophic doubt." Neither team work nor the team spirit attracted him, but he had the faculty of getting the last ounce of work out of his assistant workers, because he gave the last ounce himself. Another quality of Macewen's work was its thoroughness and completeness. He was never in a hurry to publish, and when he made his statement it was final. This note of finality was peculiar to much of his work and of his writing; it represented, in as perfect a form as he could give to the world, what was his final position at that stage, one more well set rung in the ladder of advancing knowledge. Macewen, however, would have been the last to claim in respect of any part of his work that it was possible ever to reach finality in research.



WILLIAM MACEWEN.

Three special aspects of Macewen's work were made the subject of special reference—his share in the development of modern aseptic surgery, his work upon bone, and his pioneer work upon the surgery of the brain and spinal cord. It had been said that Macewen was fortunate in having begun his work exactly at the right time, when "the possibilities of surgery were opening up like great tracts of undiscovered country," but it had also been added that "a genius such as his would have found undiscovered country to explore in any period." He played a great part in commending to his fellows the Listerian doctrine of wound infection and its prevention, and was from the first an ardent disciple of Lister, endeavouring to apply the Listerian doctrine in his work from the earliest period of his career. He, however, travelled farther than the master, and was one of the first to pass on to the development of what seemed to him the natural outcome of Lister's doctrines—namely, the ideal of asepsis and of

management, with a suitable and enthusiastic director, who in most cases should be a medical man, and should have the largest amount possible of freedom of action. Under him there should be "key" men in the various industries, who should be employed in their original occupations, and, whenever possible, should themselves have been sanatorium patients. Patients should be housed in hostels, and later, as the trading became established, houses should be built for married ex-patients and their families. The provision of such houses, which would cost at least £450 each, might come within the scope of the local council. In the matter of finance the subcommittee drew a distinction between overhead charges and maintenance and wages. The object should be to pay maintenance and wages out of the trading account, whereas the overhead charges should come from another source. Two members of the subcommittee thought that capital should be obtained through voluntary contributions to a central fund; the other two were of opinion that it was the duty of the State or of the local authority to provide employment schemes. It was suggested, also, that as the work was really a kind of treatment, the Ministry of Health should take a share by defraying the cost of maintenance of the employees on an agreed rate. The majority of the subcommittee did not favour this suggestion. The salaries of the medical director and of non-tuberculous instructors should be overhead charges. On the question of the payment of wages and maintenance out of the trading account, various difficulties were found to exist. Thus the subcommittee favoured the use of the permanent settlements for vocational training, and also, possibly, for occupational therapy. But as such labour could not be paid at ordinary wages rates, it became of the nature of subsidized labour so far as the settlement was concerned. Such subsidized labour was stated to be necessary to the success of the settlement, and in many cases the persons under training were paid a bonus. The question arose whether the bonus should be paid in cash after a maintenance charge had been deducted, or should all profits go to the settlement? The subcommittee was of opinion that, whatever the answer, the State should pay a bonus to those whose training extended over a long period. For the trained settlers the rate of wages, if not fixed by trade unions, must be sufficient to enable the ex-patient and his dependants to live in comfort.

As the occupations selected for the settlement must come into competition with business concerns, two of the first conditions of success were found by the subcommittee to be businesslike administration, with successful advertising capacity, and ready markets. Even if these conditions were fulfilled two further difficulties arose. The patients drawn from an area with a suitable market might be quite unsuitable for the occupations selected. Thus the coal-miner had been found to be a very difficult person to fit into an occupation suitable for his working capacity as an ex-patient. Farm work proved to be too arduous in most cases, and it was not always easy to fit ex-patients in these categories with an occupation. In fact, the director of the New York Tuberculosis Association considered that "teaching Chinese to a negro, infusing a Latin-American with a puritanical outlook on life, or inducing statesmanship in a politician are problems equal in toughness to finding a suitable job for a tuberculous person, and keeping that person in that job." The other difficulty arose from the trade unions; but the unions had, after a clearing of the air, pronounced the following decree: "Labour has no objection to the employment of consumptives in colonies provided that certain stipulations which are all 'labour protecting' are agreed to. What it does object to is the possibility that consumptives may be trained and then thrown on the labour market, there to obtain work for which a reduced rate may be paid by unscrupulous employers. Provided the man is employed in a colony and paid the current wage, and the produce not sold at undercut prices in the open market, no objection is raised."

From the rest of the subcommittee's report we gather that the aim of the settlement worker is mainly to obtain additional remuneration, though he is not altogether unmindful of the benefit that accrues to his health; that he is liable to estimate the value of his work in hours rather than in market value; that the "civilian" married ex-patient with a large family is a great difficulty, but that the ex-service pensioner introduces the problem of the rate of wages that should be paid to him; and that the expectation of life in a settlement is two or three times longer than it is with sanatorium ex-patients. In defence of the cost of establishing settlements the subcommittee urges that the system removes infectious persons from direct contact with the rest of the community; that it enables the maximum productive capacity of the ex-patient to be determined; and that in any case the results are cheaper than frequently admitting into, and discharging from, a sanatorium a tuberculous patient who returns to his own home and work.

The report of the committee of management of the Cambridgeshire Tuberculosis Colony at Papworth is somewhat of a hymn of praise in honour of the ten years' success of the venture. The committee and the medical director, Dr. P. C. Varrier-Jones, have, in truth, much upon which to congratulate themselves. The twenty-five houses, for which a grant of £10,000 was received from the Ministry of Health, are now complete. But they cost more than the Ministry allowed, so that £1,000 had to be found elsewhere. The inhabitants of the institution and village now number 559, including 90 healthy children. A showroom for the sale of furniture has been opened in Cambridge. The enthusiasm of the medical director is abundantly displayed in his portion of the report. "So far as Papworth is concerned, we were not only on the right lines, but our faith has been completely justified." If a village settlement is composed of men "who are prepared to give more than they get," and not of "those who want to get more than they give," "then all will be well." Dr. Varrier-Jones thinks that village settlements are essential in combating tuberculosis; and he enumerates the ideal principles necessary for success. Some experimental medical work has been carried on during the year. Thus trial was given to sanocrysin, but the conclusion was that it had no effect whatever in checking the disease. On the trading side the sound principle has been adopted that the industries are a commercial concern, and trading on "sympathy" is avoided. The social side and the amusements of the settlement are well organized, and the development of the scheme has plainly been very satisfactory. On Monday last His Majesty paid a visit of inspection to the colony.

EPSOM COLLEGE.

THE annual general meeting of the Governors of Epsom College was held on June 25th, when the chairman of council, Dr. RAYMOND CRAWFURD, presided. A vote of condolence was passed with the relatives of the late Sir Henry Morris, Bt., who, in 1924, resigned the position of treasurer which he had held for eighteen years.

The CHAIRMAN expressed his satisfaction that in the near future there would be representatives of the British Medical Association and the Medical Insurance Agency upon the council of the College. He submitted the annual report of the council, which showed a substantial financial surplus on the year's working; this gratifying result was due to the receipt of several legacies for general purposes and to the zealous support of many old and new friends of the College. The thanks of the governors were due to the honorary local secretaries, the British Medical Association, the Medical Insurance Agency, the Pathological Society of Great Britain and Ireland, the numerous Panel Committees, and the Editors of the *British Medical Journal* and the *Lancet*. The various improvements at the College during the year included the erection of a new chemistry block at a cost of about £10,000, which would be complete and in working order by the end of July; a lower school annexe, costing about £2,500, and providing much needed washing and drying room accommodation; and the reorganization of the heating and hot-water systems at the College, involving an expenditure of about £6,000, but ensuring a considerable annual saving. A committee had been appointed to consider the construction of a more suitable cricket pavilion, at an expenditure of about £2,500, but

the foundation of a Macewen Memorial Lectureship, and arrangements had been made with the University Court to carry out that purpose. Sir DONALD MACALISTER, in accepting custody of the bust (the work of Mr. G. H. Paulin, A.R.S.A.), said that it was a memorial of a great investigator and a great teacher, whose achievements in the beneficent science and art of surgery had enhanced the fame of the Glasgow School of Medicine and had added lustre to the chair once occupied by Lister. He offered the cordial thanks of the University to the pupils and admirers who had enriched the University with this and other cherished memorials of Sir William Macewen.

Among the recipients of the honorary degree of LL.D. at the graduation ceremony were Professor Tuffier, the well known French surgeon, and Dr. A. K. Chalmers, for many years medical officer of health for the city of Glasgow. Various bequests to the Medical Faculty of the University were intimated: from the late Dr. John Hall and his sister Miss Helen Nelson Hall, London, the sum of about £70,000, for the foundation of Tutorial Fellowships in Surgery, Medicine, and Midwifery; from an anonymous donor, £30,000, for the foundation of a Medical Research Fund; also from an anonymous donor, £5,000, for the foundation of a Royal Samaritan Hospital Lectureship in Gynaecology.

EMPLOYMENT FOR THE TUBERCULOUS.

SOME light is thrown on the difficult question of the employment of consumptives when they have reached the stage of apparent recovery by three documents which have recently come into our hands. It will be profitable to give some account of them.

In October, 1924, the Joint Tuberculosis Council appointed a subcommittee to undertake a comprehensive survey of the question of the employment of consumptives. The subcommittee reported last March. On May 12th of this year the committee of management of the Cambridgeshire Tuberculosis Colony at Papworth presented its report for 1925. And Dr. Bolton Tomson, vice-chairman of the Hastings Tuberculosis Care Committee, has just published a small book entitled *Notes and Suggestions on the Finding of Employment for the Tuberculous by Tuberculosis Care Committees.*[1]

Taking the last of these productions first, it may be noted that Dr. Tomson thinks the problem of finding employment for the consumptive is best solved by permanent colonies, such as that at Papworth, and although, in his words, "conclusions that are self-evident to the expert and the initiated often take long to obtain a general acceptation," it is, perhaps, more than possible that the community will have to shoulder the expense of a colony system. In the meantime Dr. Tomson sets forth the difficulties which care committees have to face, and describes three forms of occupation which can be usefully developed in suitable cases. The difficulties met with in the patients arise in deciding on their physical capacity for work, on their character and their willingness to work if help is granted, on their special aptitude for different kinds of occupation, and on their general education. The man who has occupied a good position, and has exhausted all his savings through the long duration of his disease, is generally a highly satisfactory patient to help. On the other hand, there are few employers who will engage a tuberculous person. Hence most of the sufferers must work on their own account. They should also be at liberty to work when they can and rest when they ought. A further difficulty noted by Dr. Tomson arises from "disablement benefit" under the National Health Insurance Act, 1924. The author thinks that it would be an enormous advantage if those partially disabled permanently from tuberculosis were allowed to do what work they could, and still receive their weekly payment provided their earnings did not exceed a specified sum. To Dr. Tomson tuberculous persons are a class apart, and to make an exception for them would not establish a precedent. Without payment for work many patients lack the incentive to try what they can do; they mope about at home, and invariably go downhill. For the man who is not bound by Insurance Act restrictions, and is able and willing to work, Dr. Tomson at once accepts the proposition that a subsidy is required, and that this subsidy must come from the Government. The author then gives details of the three schemes for providing work which he would recommend to care committees. For women he suggests the unpicking and scouring of old woollen or silken hand-made garments, the materials of which can then be made up into fresh garments suitable for the poor. He has found that this employment, though not very lucrative, competes easily with the hard work of charing, and is far more remunerative than home needlework. For men Dr. Tomson suggests rabbit farming and "poor man's pig-keeping." All these occupations involve the utilization of waste products, such as old clothes, pig-swill from neighbouring houses, and so on. By this utilization the industry is subsidized and can be made profitable. In each case there is a certain and constant sale for the products. But it is necessary in these employments, as in all others, to select persons who are suitable for the job. Dr. Tomson gives interesting details of the materials required and their cost in each of these occupations.

The employment subcommittee of the Joint Tuberculosis Council consisted of Dr. Jane Walker of London, Dr. D. P. Sutherland of Manchester, Dr. H. Vallow of Bradford, and Dr. J. B. McDougall of Hexham (convener). Their report is not a model of clarity. This is probably due to the intricacies of the subject; to the distances which separated the members, and the consequent difficulty they had in meeting; and to the fact that they were not agreed in opinion. The subcommittee investigated eight schemes by which it has been attempted to find employment on an organized industrial basis for consumptive persons. It seems that under these schemes 419 ex-patients, apart from those employed at institutions as nurses, maids, porters, and so on, are now engaged in employment as wage-earners. The subcommittee was convinced of the success of the employment of ex-patients as full-time workers on the staffs of sanatoriums, and no further reference need be made to this class of worker. The concern of the report is with those ex-patients who, having been patched up at a sanatorium, and put through a course of training in work more situable for their condition than their original occupation, are then in need of remunerative employment. It is stated in the report that at none of the training colonies inaugurated by the Ministry of Health has any serious attempt been made to continue the work at a settlement or on a proper industrial basis. The schemes for this purpose have been private, voluntary or charitable in origin.

The subcommittee was of opinion that schemes for the employment of the tuberculous should have three objects: (1) occupational therapy, (2) vocational training, (3) permanent settlement of ex-patients who had passed through a satisfactory period of training. Dr. Vallow, however, dissented, for he does not believe that the majority of patients would accept these provisions, or that they are financially possible. (The reasons for his belief are not given in his supplementary report.) The subcommittee thought that training colonies and settlements should not be started *de novo*, but that occupational therapy should be begun at a sanatorium, and the departments developed slowly at first. The training should be an integral part of treatment, until by co-operation and efficiency a surplus on trading enabled maintenance and wages to be paid to one permanent settler after another. The raising of any large sum as capital should be delayed as long as possible. Occupational therapy should be directed towards permanent employment; the occupations should not be too numerous, and should be those in which there was an assured market; and the work should be repetitive, as in mass production, rather than highly skilled. In such occupations the period of training could be reduced to a minimum, and the difficulties raised by the question of giving a bonus to those under training ("trainees"—a horrible word—in the report) would be lessened. The subcommittee was of opinion that in forming a settlement the venture should at once be legalized by making it a limited liability company. There should be a small committee of

[1] *Notes and Suggestions on the Finding of Employment for the Tuberculous by Tuberculosis Care Committees.* By W. Bolton Tomson, M.D. London: Baillière, Tindall and Cox. 1926. (Demy 8vo, pp. 27; 3 figures. 1s. net.)

British Medical Journal.

SATURDAY, JULY 3RD, 1926.

THE PROBLEM OF RHEUMATIC INFECTION IN CHILDREN.

THE ASSOCIATION'S REPORT.

As it exists in this country to-day, rheumatic infection is one of the great infective diseases afflicting the children of the poorer classes. In the harm that it produces it is comparable only with such infections as tuberculosis and pneumonia. Meeting with it here on the grand scale, the British school of medicine has been responsible for most of the important researches into the disease. The foundations were well laid by W. B. Cheadle in his lectures on the rheumatic state in childhood, given in 1888, and since then there has been continuous effort on the part of British physicians to advance against the difficulties of this national problem. It is probably true to say that in no other of the major diseases of childhood has so great a proportion of valuable research been carried out by British workers; and when the special prevalence of the disease in this country is considered it is difficult to escape the thought that the problem of rheumatic infection is one specially set the British medical profession to solve. It is, therefore, with particular pleasure that we devote this week's SUPPLEMENT to the Report of a Special Subcommittee of Inquiry into Rheumatic Heart Disease in Children.

This inquiry owes its inception to the Section of Medicine at the Annual Meeting of the British Medical Association at Portsmouth in 1923. In opening a discussion on the "Etiology and treatment of heart disease in early life," Dr. Reginald Miller referred to the various gaps in our knowledge which prevented our combating in a national way this great national disease. In particular he laid stress upon the fact that—such was our ignorance of the factors in the mass production of the disease in England—we were making, and could make, no organized effort to diminish the prevalence of the infection; yet there was one indisputable but unexplained fact—the class-incidence of the disease—which was likely to throw great light upon this very question, were it looked into. He therefore suggested that a small committee should be appointed to investigate the environmental factors in the production of rheumatism, urging that the possibility of damp houses breeding the disease should be examined.

In taking this line Dr. Miller was doubtless giving expression to what was in the minds of many others, and on the motion of Dr. George A. Allan a resolution was carried asking the Council of the Association to appoint such a committee. The matter was referred by the Council to the Science Committee, which in January, 1924, appointed a Subcommittee "to inquire into the steps which have been, and are being, taken in relation to the prevention, detection, and treatment of cardiac disease in children, and to make proposals in connexion therewith."

Sir Humphry Rolleston consented to act as Chairman of the Subcommittee, and we may here express the Association's gratitude to him. The fact that, amid the many duties of his then office as President of the Royal College of Physicians, he undertook this extra work, gives public emphasis to the importance of the subject under inquiry. The Science Committee was also fortunate in securing the services of Dr. F. J. Poynton, whose pioneer work in rheumatic infection is so well known. Dr. George A. Allan of Glasgow, Dr. Carey Coombs of Bristol, and Dr. A. P. Thomson of Birmingham were also appointed. Their special interest in the rheumatic problem in these cities enabled the Subcommittee to gather valuable information over a wide field. Dr. Reginald Miller was appointed Honorary Secretary. Sir Thomas Lewis was unable to accept membership of the Subcommittee, but at the invitation of the Chairman gave much appreciated help by attending its meetings.

The point of view of the Subcommittee was, therefore, essentially that of the clinical physician. Although the Report deals with certain aspects of rheumatism which are outside the strictly clinical purview, and much of it must appeal specially to public health workers, yet we regard it as a gain that it is written by those who are themselves actually responsible for the medical treatment and welfare of numbers of rheumatic children. The Preface to the Report is a brief document summarizing the conclusions and proposals of the Subcommittee as a body. The four reports, upon which the Preface is based, are written by the individual members, who are alone responsible for them.

Environmental Influences.

In some respects the first report, which is on the environmental and other predisposing causes of rheumatic infection, is the most important of the four, in that it deals with matters which may lead towards the prevention of the disease. In it Dr. Miller follows up the line of thought of his Portsmouth paper from which we have already quoted. There he said that rheumatic infection was almost entirely a disease of hospital as opposed to private practice; but later work, done in Bath and Birmingham particularly, shows that the class-incidence of the disease is indeed unlike that of any other non-infectious disease. There seems to be a definite rheumatic stratum of society, excluding the well-to-do on the one hand, and, though not so completely, the very poor and semi-destitute on the other. Further, it appears true that it is a disease of towns, especially of industrial towns, rather than of rural districts, and some startling figures are quoted in this connexion. The rheumatic infection is therefore essentially a disease of the children of the artisan or upper poor classes, particularly of those living in industrialized areas. To come back to the question asked at Portsmouth—What is the explanation of this peculiar fact? Tonsillar disease is too widespread to explain it. Living on low-lying sites or near water will not of itself account for it, as witness Dr. W. Attlee's most important experience at Eton College. Attendance at elementary schools, with its resultant exposure to bad weather and epidemics, is, taken alone, inadequate, or rural children would suffer most. Dr. Miller concludes that it is largely a matter of living in damp houses, especially in basements and in ground-floor rooms with no cellars beneath them. Investigations carefully pursued in London, Bath, Birmingham, and Bristol all tell much the same tale—namely, that nearly two-thirds of the children, when first attacked by rheumatic infection, are living in damp rooms. The Subcommittee concludes that this fact has a very important bearing on the problem of the prevalence of rheumatic infection in this country.

Bacteriology of Rheumatic Infection.

Still with the prevention of the disease in mind, the Subcommittee has in Part II applied itself to this question, and the report written by Dr. Carey Coombs

it was felt that the council would not be justified in devoting money from the general funds of the College for this purpose owing to the very large sum expended on other improvements. If the committee was able to raise enough money it was hoped also to take in hand the much needed levelling of portions of the playing fields. Mr. Herbert S. Pendlebury, who had held the appointment of treasurer since 1924, resigned this office, and in his place Sir William Hale-White was appointed. The War Memorial Fund, which had been instituted by the Old Epsomian Club to enable the nave of the chapel to be rebuilt in harmony with the new chancel, would be closed at the end of the present year. The total cost of enlargement, fixtures, and furniture was about £11,500, and at present there was a deficit of nearly £2,000. A new scholarship had been provided under the will of the late Dr. James Taylor to assist the education of any specially meritorious pupil at the College, and a new annuity had been bequeathed by Miss Mary Elizabeth Dunn. The school library had been completely refurnished and redecorated and adequately equipped.

Pensions and Scholarships.

The scrutineers, Dr. Seymour Taylor, Dr. E. Climson Greenwood, and Sir Ernest Goodhart, reported the successful candidates to be as under:

Pensionerships:	Votes.
*Thomson, Malcolm E....	6,636
*Staniforth, John W.	2,365
†Maitland, Clara B.	2,176
‡Alexander, John	154

* "Ordinary" pensioners. † "Pugh" pensioner. ‡ "Highett" pensioner.

The R. R. Cheyne Annuity:	Votes.
Hope, Miss Frances S. J.	1,931

Foundation Scholarships:	Votes.
Johnson, Everard S. R.	12,490
McDonald, Charles F.	12,083
Galpin, Richard J. L.	11,066
Blakeway, Michael G.	8,692
Williams, Paul G.	6,671
Matthews, Guy A.	6,562
Adams, John E.	6,072
Hudson, Eric J.	5,159
Cook, Robert S.	4,315
Rew, Kenneth G. R.	3,800

THE HEALTH OF THE NAVY.

REPORT FOR THE YEAR 1923.

THE statistical report of the health of the Navy for the year 1923 has just been published. It is similar to the report for 1922, of which a notice appeared in the BRITISH MEDICAL JOURNAL in September last (p. 523), and contains no features or record of incidents of an outstanding character. Its merit lies in the fact that it presents accurate statistical data for comparison with previous years and with the other services. Continuity of statistics is what it aims at, and rightly so.

Incidence of Sickness.

The average strength of the Royal Navy for the year under review was 89,100, and of this number 35,650 were on the Home Stations, 23,850 in the Atlantic Fleet, 16,740 on the Mediterranean Station, 1,990 on the North America and West Indies Station, 4,730 on the China Station, 1,740 on the East India Station, 1,570 on the Africa Station, and 2,830 on the Irregular List—that is to say, crews of warships on passage to and from foreign stations, Imperial personnel lent to the Australian Navy, and crews of the New Zealand Division. The returns of sickness and injury from all of these show a marked improvement in the general health of the Fleet. The total number of admissions to the sick list for disease or injury was 42,186, or 473.46 per 1,000 of the average strength, a decrease of 98.57 per 1,000 on the average for the previous two years, and of 85.56 on the rate in 1922. The majority of the admissions were due to venereal diseases (8,295), diseases of the respiratory system (5,162), of the digestive system (6,662), of the areolar tissue and skin (5,566), and to local injuries (7,986). No other disease or group of diseases exceeded 1,000, and there was a marked freedom from the enteric fevers and Mediterranean fever, which previous to the year 1907, when the use of goat's milk and unboiled fresh milk was prohibited in the Navy, was a source of considerable inefficiency. Sandfly fever, on the other hand, shows no signs of decrease. There was a marked improvement in the incidence of influenza, only 863 cases being recorded, as compared with 4,514 in 1922. Prophylactic influenza vaccine, prepared at the Royal Naval Medical School, Greenwich, was used, inoculation being entirely voluntary, in addition to other preventive measures. The healthiest station was the Atlantic Fleet, with a ratio of 360.62 admissions per 1,000; the most unhealthy the East Indies, with 870.11, and China with 868.07 per 1,000. The ratio on the Africa Station was 659.86 per 1,000; on all other stations it was between 400 and 500 per 1,000.

Invaliding.

The ratio of invaliding out of the service was 16.08 per 1,000, or 5.79 less than the previous two years' average and 4.23 less than in 1922. In only one station—Africa—was there an increase on the two-year average, a slight one of 2.97; in all others the decrease in the ratio of invaliding varied from 2.29 on the China Station to 9.09 in the East Indies. In a table showing invaliding according to age and length of service the majority, 479 out of 1,511, belonged to the age group 25 to 35; and 605 to the group 5 to 10 years of service; but these figures are of little value without information as to the strengths of the various groups. The chief causes of invaliding were: diseases of the eye, 208 cases; of the ear, 166; gonococcal infection sequelae, 156; tuberculosis, 150; and neurasthenia, 103 cases.

Mortality.

The total number of deaths in 1923 was 194, equal to a ratio of 2.17 per 1,000. This is 1.35 less than the previous two years' average, and 1.27 less than in 1922. The deaths from disease numbered 125, and from injury 69. The decrease in mortality was general on all stations, being as much as 3.50 per 1,000 less than the two years' average in the East Indies and 3.49 per 1,000 less on the North America and West Indies Station. In the 1922 report a table was given showing the yearly death rates from 1856 onwards. The table is repeated in the report under review, and shows that 1923 has had the lowest death rate on record—2.17 from all causes and 1.40 from diseases alone. A chart showing the fluctuations and eventual remarkable decline in the death rates during the last half-century would be a significant demonstration of the improvement in the health conditions in the Royal Navy. Unfortunately no graphic charts are introduced into these reports.

Comparative Statistics.

Now that the report of the health of the Royal Navy for 1923 has been published a comparison can be made between it and the health of the Army and Air Force, the reports on which for the same year were published at a considerably earlier period. The following table may consequently be of interest as showing how far the main health statistics of the three forces resemble one another.

19 3.	Navy.	Army.	Air Force.
Admission rate per 1,000 ...	473.46	484.0	473.8
Invaliding	15.03	14.50	12.7
Constantly sick	21.84	41.52	23.0
Deaths	2.17	2.84	3.9

These figures are not, however, altogether comparable, as the admission rate in the army excludes officers and the constantly sick includes men treated as out-patients. The R.A.F. constantly sick and admission rates exclude men with less than forty-eight hours' sickness.

The report has also a table of the health statistics of the Royal Marines at headquarters. The strength was 3,710, the admissions 784.09 per 1,000, the invaliding 21.02, and the mortality 3.23 per 1,000.

Harrison and McNee.[1] Between 1770 and 1926 nothing very substantial has been added to our knowledge of the subject. Parrot simplified the confusion of the nomenclature by differentiating sclerema and oedema neonatorum (1877); yet there still remain with us such confusing and ambiguous terms as pseudo-sclerema and scleroedema. There has also been a good deal of hard guessing at the cause of the disease: beginning with Usembezius, whose theory was that the mother during her pregnancy had gazed much at statues of the saints, and so had impressed their rigid pose on her infant; the theory of a deficiency of olein in the subcutaneous fat and the raising of its melting point, advanced by Langer (1881); a trophoneurosis depending on disorder of the heat-regulating centres, the view of Italian writers and supported by Ballantyne; the theory of infection, also put forward in Italy, and in England by Eustace Smith; the theory of disorder of metabolism and of internal secretion.

Hitherto advance in knowledge has been hindered by the lack of two things—an agreed definition of the clinical features of the disease, and accurate microscopic and chemical examination of the morbid tissues. It has been the custom to exclude cases of so-called pseudo-sclerema, but the cases of recovered sclerema reported by Carpenter, Garrod, and Paterson are now generally accepted as cases of true sclerema. Harrison and McNee present five cases of this milder group; four were fatal and one recovered; the second of their cases they themselves admit to be doubtful. They take up and attack the problem of sclerema from the side of histology and chemistry, presenting a careful examination of the morbid subcutaneous tissues by modern chemical and microscopic methods, with control observations on normal fat in young infants.

Paraffin and frozen sections showed definite thickening of the interlobular fibrous trabeculae; atrophy and necrosis of fat cells; and a remarkable deposit of acicular crystals within the cells, also thickly encircling them "like the cover of a ball," and even deposited in thick masses, which appeared as empty clefts in the paraffin sections. There was observed also in the sections definite obliterative endarteritis; an abundant deposit of lime salts in most of the cases; giant cells adjoining the crystalline deposits; and some round-cell infiltration throughout. In all cases the true skin was unaffected; in the most severe case the process of fibrosis extended into the underlying muscle. In the second (doubtful) case the changes were similar but minimal in degree. In two of the cases deposits of lime salts seemed to be visible on *x*-ray examination; in a third, where lime salts were evident microscopically, they were not shown by *x* rays. These appearances, occurring in cases of chronic but yet fairly severe and extensive sclerema, are interpreted by the authors as those of chronic inflammation and its sequelae.

The results of the elaborate and carefully controlled chemical examinations were also interesting, and perhaps even more important. They begin with reference to Langer's theory of an abnormal constitution of the fat in sclerema, and to the still earlier theory of the influence of cold; but they go much further, and establish new and important facts in the chemistry of subcutaneous fat, normal and diseased. It has already been established that the melting point of the subcutaneous fat of healthy young infants is higher than that of adults, and it seems reasonable to ascribe this to the smaller content of olein and the relatively greater content of palmitin and stearin, which is also an accepted fact. This normally high melting point in the fat of healthy infants is still further, but not greatly, raised in sclerema fat. The question therefore arises whether this greater solidity of the fat in sclerema is due to a further reduction in the olein content. Some observers have answered this in the affirmative, others in the negative. Dr. Harrison found no significant reduction of olein in his cases, but nevertheless thinks it possible that a slightly higher proportion of palmitin and stearin might account for the raised melting point of sclerema fat; though the cholesterol content was also increased, he is satisfied that this was not a factor in the raised melting point. With regard to the abundant acicular crystals that were such a prominent feature in the sections, important and definite conclusions were reached. These also are apparent in normal fat cells, and in both cases give similar chemical reactions and are anisotropic to polarized light; they are probably neutral fats of the higher series, and it is unlikely that they are cholesterol compounds; in sclerema they probably exist in crystalline form during life. An excess of calcium and phosphorus was also found in sclerema fat.

The broad result of this careful and controlled analysis is that the chemical constitution of sclerema fat is not greatly different from that of the normal subcutaneous fat of young infants, and that the histological picture indicates a definite process of chronic inflammation. After a very judicial weighing of the evidence Dr. Harrison's provisional conclusions are rather against a primary disorder of chemical constitution and metabolism; he thinks it is probable that the inflammatory changes are primary and determine the abnormal chemical condition of the fat. No evidence of bacterial agency was obtained; but it is hoped that further cases will give opportunity of investigation along these lines.

This brief account will serve to show what a valuable contribution to the problem of sclerema neonatorum has been made. By this laborious spade-work some obstinate and disputed questions have been answered, and one or two paths have been cleared which promise further progress towards the final elucidation of the disease.

[1] An Investigation of Sclerema Neonatorum, with Special Reference to the Chemistry of the Subcutaneous Tissues. By G. A. Harrison, B.A., M.D.; with a Histological Report by J. W. McNee, M.D., F.R.C.P. *Archives of Disease in Childhood*. April and June, 1926. London: British Medical Association House, Tavistock Square, W.C.1. Yearly subscription (6 numbers), 25s.; single number, 4s. 6d.

THE EPILEPSIES.

THE lecture by Dr. Kinnier Wilson published in this week's JOURNAL (p. 1) includes a helpful critical survey of some of the numerous theories which have been formulated to account for the various clinical symptoms to which the term "epileptic" is applied. The views he expresses must carry no little weight, since they are based upon a wide experience of epilepsy in all its manifestations, and also upon a number of clinical researches in the sphere of neurology which have a direct bearing upon the physiology and pathology of convulsive episodes.

There is no disease which merits more attention than epilepsy. The number of cases is not small, and the symptoms included under this heading are of such a kind as to be disastrous to their subjects, and, even when manifested in mild form, seriously diminish their social efficiency and opportunities in life. In spite of the vast amount of investigation which has been directed to epilepsy and other apparently related forms of nervous disease, we know but little of their causation, and treatment can thus only be palliative rather than curative. Dr. Wilson fully recognizes this

and Dr. F. J. Poynton will be read with interest. It is now over a quarter of a century since Dr. Poynton and Dr. A. Paine advanced the view that the infective agent was a streptococcus. In spite of many failures and difficulties it appears that this view is steadily, though slowly, gaining acceptance. Recent investigations, says the Report, go to support it. It seems likely that the time is approaching when judgement in favour of the streptococcus theory may be given by default—no claimant remaining against it. Even so, so much remains which is obscure that we hope that the centre of activity in rheumatic bacteriological research will not shift away from this country.

The Effect of Tonsillectomy.

With Part III the Report begins to deal more directly with the treatment of rheumatic infection in children. The effect of tonsillectomy has been studied by others, but their results have been in total disagreement. Dr. Miller, who writes this section, suggests that this is due to their use of a method of investigation which, in this protean disease, is too complicated to give accurate results. Instead of attempting an investigation by a "follow-up" method, he advises the study of a series of cases of active rheumatism in tonsillectomized children, and a comparison of such with that seen in children with unremoved infected tonsils. Applying this method to a series of cases, he finds evidence that the infection is definitely modified by the operation, the heart in particular tending to be spared. No protection seems to be given against chorea, but the outlook as regards carditis is, of course, of prime importance. Figures relating to active rheumatic infection in children whose tonsils have been completely removed can be compiled with fair ease, and it will be interesting to see if the results of the present series are confirmed by others. Proceeding a step further, the Subcommittee has had to face the question of the advisability of tonsillectomy as a routine measure in rheumatic children. The opinion expressed is that to recommend such a step at the present time would be premature; the presumption is, therefore, that with growing opportunity for expert surgical assistance early tonsillectomy should be widely adopted. The Subcommittee has wisely refrained from discussing the different modes of operation, and has referred simply to the "complete removal" of the tonsils.

Organized After-Care.

Dr. George A. Allan, writing in co-operation with Dr. A. P. Thomson, furnishes an interesting report on what is being done to provide efficient after-care for rheumatic children. Evidently where such facilities are provided the results are encouraging. Although it appears that interest in this work is increasing, the burthen of the report is that it is as yet quite insufficient.

Conclusions and Proposals.

The proposals of the Subcommittee are succinctly expressed in the Preface, and more fully in the four reports. We will here deal only with the two which are of greatest importance, and which call for a widely organized effort.

First, in the all-important matter of prevention, there is small satisfaction to be obtained from the Subcommittee's expression of opinion that, up to the present, little or no organized effort has been made to prevent the disease. When we consider that, in its prevalence and harmfulness among children, it equals, if it does not surpass, tuberculosis itself, we may well wonder what the public will think of this verdict. The class incidence of the infection seems to point clearly to the importance of environment in spreading the disease, and this should be susceptible of control. It is for the public health authorities to investigate and to act. It is not enough to say in this connexion that "dampness in houses is a condition which stands condemned, as a result of general experience and in relation to various ailments in addition to rheumatism."[1] Were this so, it is a singular excuse for the damp house; but the Association's report suggests that damp produces acute rheumatism in children in a way more direct than by increasing the general sickness rate. The nation may surely desire some assurance that the new homes of the people will be in this respect an improvement on the old. As regards exposure to wet by attendance at elementary schools, it is clearly an immense undertaking to provide drying facilities for the children, although we believe that in isolated instances such are being established. But it would not be a difficult matter to arrange that, on a single medical certificate, a rheumatic child might for some months be allowed to attend school irregularly even though it cannot yet be classed as "physically defective."

Secondly, there is the question of the provision of prolonged treatment for children with rheumatic heart disease. The need is for more beds where these children can have controlled rest with education. It is their education and the education grant which have proved such difficulties in the past. The movement to provide proper provision for these cases is increasing; it needs organization and guidance. In this connexion we would offer some suggestions. First, these cases are a confession of failure: it is prevention that must be the prime object of our efforts. Secondly, every case of heart disease in a child is essentially a rheumatic rather than a cardiac problem. It belongs to the realm of pediatrics rather than to that of cardiology. Therefore, thirdly, it is essential that these recovery facilities should be worked in close co-operation with the hospitals. In saying this we are but restating the opinion of the combined meeting of the Children's and Public Health Sections at the Association's meeting at Bath last year, where this matter was under discussion.[2] There a strong feeling was expressed against the proposal to set up "cardiac clinics" and "cardiac experts" on the lines of the present antituberculosis movement. Lastly, we suggest that caution is necessary before it is regarded as settled that open-air treatment is wisest for rheumatic children. It is but a short step from overexposure to active rheumatism, probably shorter than obtains in tuberculosis, and the results of open-air schools and other treatment of the same type seem hardly uniform enough to justify as yet the adoption of this mode of treatment as a settled policy.

SCLEREMA NEONATORUM.

Sclerema neonatorum is a disease both rare and remarkable. It appears first in medical writings in terse and graphic Latin, "foetus vivus, frigidus et rigidus," as recorded by Usembezius of Ulm in 1718. But it was Underwood of the London Lying-in Hospital who in 1770 gave the first good clinical description of the condition. And it is again from London that, in the two recent numbers of the *Archives of Disease in Childhood*, there has appeared a really important contribution to the subject by

[1] *Incidence of Rheumatic Diseases.* Ministry of Health, 1924, xxiii, p. 42.
[2] BRITISH MEDICAL JOURNAL, 1925, vol. ii, p. 788 et seq

induce Sir George Newman in any future edition of his essay to transfer rheumatism and the heart disease it produces from the class of non-infectious to that of infectious diseases. The original edition of the essay has been for some time out of print, but the demand for it, both in this country and abroad, continues, and it has therefore been thought advisable to issue a new edition.[1] The form remains unchanged, but the opportunity has been taken to add a considerable amount of new matter to the text, and to revise the whole. The sections on rickets, on mental disease, and on dental disease have, for instance, been expanded, as has also that on industrial hygiene; that on alimentary disease seems to have been largely rewritten. Since the first edition was published in 1919 the General Medical Council has revised the medical curriculum, and one of the main objects of the changes made was to ensure that all forms of clinical medicine should be permeated with the idea of prevention; for example, provision is now made for instruction in ante-natal conditions and infant hygiene, and each student is required to undertake the duties of an intern in a lying-in hospital. These facts are duly noted, and all the way through the needs of the student are borne in mind. The essay, therefore, which we are glad to note has been issued at the low price of 1s., may well be bought by students as one of their textbooks; some of them, and these among the best, often get bewildered as to the meaning of the curriculum—they cannot see the wood for the trees. Sir George Newman has a good deal to say which will help them—and help, too, very many men in practice, especially the younger men, who also are inclined to cry, "What is the good of it all?"

RESEARCH DEFENCE SOCIETY.

THE annual meeting of the Research Defence Society was held on June 25th under the presidency of Lord Lamington. Both he and Lord Knutsford paid sympathetic tributes to the work of the late Mr. Stephen Paget, the founder of the society. Lord Knutsford said that he did not think he had ever known a truer friend or a more lovable soul. Stephen Paget had been held up by those who opposed him as a man who loved controversy for its own sake. That was not so. No man liked controversy less, but he hated anything that savoured of untruth or misrepresentation, and made war upon it unhesitatingly. His death was a great loss to the society, whose existence he had safeguarded through some difficult times; it was proposed to establish a Stephen Paget lectureship as a memorial. Sir David Ferrier, in presenting the accounts of the society, said that the financial position had much improved during the year, owing principally to a legacy of £1,000 under the will of Dr. John Hall. After the formal business had been disposed of, Dr. J. A. Murray, F.R.S., director of the Imperial Cancer Research Fund, gave an address in which he said that experimental study of cancer started some twenty-five years ago, and its course might be divided into three periods. The first began with the work of Jensen and Borrel on transplantation, and the second was marked by the work of Fibiger and Yamagiwa and their followers, in which the production of cancer *de novo* in normal animals was achieved. The third period overlapped the second, and embraced the work of Peyton Rous, Blumenthal, Gye and Barnard, and others, on the possibility of micro-organisms entering into the mechanism of cancer origins. In general it might be said that the experimental investigations had made the definition of cancerous processes more precise, and had enabled a decision to be made between alternative statements of problems either of which might otherwise have been taken to be true. Jensen and Borrel at the end of last century showed that cancerous growths could be propagated in series in normal animals of the same kind by the introduction of fragments of original growth under the skin. The constant repetition of the same features in a succession of experiments on transplanted cancer in mice permitted the conclusion that the cancer cell behaved as it did because of differences inherent in it, or permanently imposed upon it, and not because of the peculiarities of the individual in which the growth had arisen. Jensen also observed that an animal which had resisted a first transplantation was more immune to a second transplantation, though when workers began to use this process of immunity for transplanted tumours they found that even very energetic methods of immunization did not avail to stop the growth once it had started. The second period of cancer research concerned itself with the production of cancer *de novo*, not merely with its continuation and transplantation. Cancer might arise from exposure to products of shale or coal distillation, or to physical agents such as heat, ultra-violet rays, and *x* rays. He described in particular the work on growths produced by tar in mice, and pointed out that the cancerous proliferation did not begin all over the area to which the tar was applied. Cancer was not a direct response to the irritant action of tar. After the process had started the growth still went on though the application of the tar was stopped. The tar evidently set up a condition which made the cancerous change possible. If a tar cancer was produced in an animal, and then removed by operation, a second tar cancer was more difficult to produce; it was true also that a second cancer was more difficult to produce if the first had been a spontaneous cancer which had cleared up. In discussing the third stage of progress Dr. Murray came to the work of Gye and his colleagues. It was still too soon, he said, to express a final opinion on the validity of Gye's views, but it was only fair to say that this was the first time that the microbic formation of cancer had been presented in a form not incompatible with the known facts of cancer structure and behaviour. Dr. Murray said, in conclusion, that it had often been stated, and was likely to be stated again, that the key to the secret of cancer would probably be found in some other direction—in electrophysics, for example, or in chemistry, or embryology, or what not. This suggestion was always presented in a vague form and in rather high-sounding phraseology. He suspected that it arose from a very human weakness which supposed that the cancer problem could be elucidated by going round to the back door. For his own part he did not believe it. Experiment had defined the problems, and it was only by first-hand acquaintance with the facts that a just statement of the position could be kept before the mind of the investigator.

SUBURBS OR SATELLITE TOWNS.

WRITING in *Barnaby Rudge* of the year 1775, Charles Dickens says of Clerkenwell that although this part of the town was parcelled out in streets and plentifully peopled, "there were gardens to many of the houses and trees by the pavement side, with an air of freshness breathing up and down which in these days would be sought in vain. Fields were nigh at hand. . . . Nature was not so far removed or hard to get at as in these days." The extent of urbanization of London since the days of Dickens has forced itself on the notice of the public, and the London County Council appears to be willing to take steps to preserve the amenities, beauty, and convenience of two sites in Bloomsbury (one comprising the Foundling Hospital), and to retain their residential character. In both these areas are squares which almost daily must have delighted the eyes of the great novelist. The area of these

[1] *An Outline of the Practice of Preventive Medicine.* A Memorandum addressed to the Ministry of Health by Sir George Newman, K.C.B., M.D., F.R.C.P., Chief Medical Officer to the Ministry. Second revised edition; 1925. H.M. Stationery Office, or through any bookseller. Price 1s. net.

fact; he points out that the physician must know the nature and etiology of the morbid condition with which he is dealing, and the mechanism of production of its symptoms, before he can obtain that definiteness of treatment which must always be his goal. He observes, furthermore, that while the external manifestations of an ordinary epileptic fit are apparent to everyone, its inward or neural genesis and progression offer problems of great difficulty and complexity, on which the outward phenomena at the best throw but an imperfect light. Like some other nervous affections, he adds, epilepsy is a condition easy of diagnosis but etiologically and pathogenically obscure, and wide excursions in neuro-physiology and experimental neuro-pathology have to be taken to gather such relatively meagre data as are at our disposal in this connexion. It is because Dr. Wilson has himself undertaken these wide excursions that we feel he is in a position to contribute something of value to our knowledge of epilepsy. A few comments may be made on his views as to the organic nature of epilepsy, as this aspect of the problem is one of considerable importance in view of the contradictory theories which have been formulated regarding the genesis of epileptic symptoms.

During the last few years much attention has been devoted to the psychogenetic factors entering into the causation of nervous and mental symptoms, and to the possibilities of their cure or amelioration by psychotherapy. The value of these conceptions and modes of treatment must not be underestimated, and it is now generally recognized that formal or informal psychotherapy bulks largely in the treatment of disease, both functional and organic. Even in the treatment of epilepsy the personality has to be considered as well as the disease, and the importance of psychological methods of approach cannot be eliminated. Thus such questions have to be considered as the attitude of the patient to his disease, the avoidance of emotional stress, the provision of suitable occupation, and the elucidation of conflicts. It is quite another matter, however, to ascribe the symptoms in the epilepsies to psychogenetic causes, as has recently been done by some clinicians, especially by those of the psycho-analytic school. According to the theories which have been formulated by these investigators, the epileptic episodes are to be regarded as the outward expression of an inward need, craving, or impulse. A state of inner tension is assumed to be created by an unconscious wish, and the fit is its method of release—a dramatic gesture, as it were, on the part of the unconscious which restores psychic equilibrium. Such theories are not unattractive, though the various speculations to which Dr. Wilson refers in his lecture as to the "meaning" of the fit are not of a kind to carry conviction. In the severe psychoses we know that patients assume postures, and exhibit resistiveness, rigidity, and prolonged states of stupor which are clearly the external expression of ideas or cravings which control the personality. It is most difficult to believe, however, that an epileptic fit is a similar form of "behaviour"—the assumption of a posture or an attitude to life. Dr. Wilson strongly deprecates such a view, and is convinced of the physical or organic nature of epileptic phenomena. Personal observation and study of many hundreds of epileptic fits, both general and Jacksonian-becoming-generalized, have not satisfied him either that all epileptic fits, roughly speaking, are alike, or that any definite scheme or organization of movement is revealed in their manifestations. On the contrary, he follows Hughlings Jackson in holding that a convulsion is a "contention of complex, and also of simplest, movements. In this contention the individuality of each movement is lost." The tonic stage he also regards as a "single big useless movement," followed at length by a succession of such rigid states, a clonic stage, a series of so-called movements "which do nothing but 'mark time.'" Holding these views of the physiological phenomena of a general convulsion, Dr. Wilson is unable to accept the psychological theories of their origin. He does not consider that the movements in a fit have any "meaning" whatever, or that they are of more significance than an explosion of gunpowder. He adds that even in respect of the "march" of movement in a Jacksonian fit, the clinical type of exaggerated, caricatured movement in no way resembles those that are called "voluntary" or purposive, while the "march" of the movements follows anatomico-physiological lines alone, and presents no point of comparison, but many of contrast, with the co-ordinated movements of a limb in health.

Though we recognize the value of studies of the personality in epileptics, the arguments in favour of an organic or physical rather than of a psychological basis of the symptoms in epilepsy would appear to be overwhelming. It seems, therefore, unlikely that the prospects of curing epilepsy by psycho-therapeutic methods, however elaborate and prolonged, are very hopeful. It would also seem probable that investigations along neuro-biological rather than along psychological lines are more likely to lead to a better understanding of this distressing malady, and thus eventually, perhaps, to curative rather than palliative methods of treatment.

THE PRACTICE OF PREVENTIVE MEDICINE.

NEARLY seven years ago, when the Ministry of Health was still in its infancy, there was issued *An Outline of the Practice of Preventive Medicine*, written by Sir George Newman, who was then, as now, Chief Medical Officer of the Ministry. It was called a memorandum, but had many of the features of a good textbook. It was addressed primarily to local authorities and their officers, but also to voluntary workers of all classes and kinds devoting themselves with public spirit to manifold services on behalf of the health of the nation. In commenting upon the first edition we observed that in the section on the prevention and treatment of non-infectious disease opinions and statements were encountered which were novel in an official report. It was perhaps partly on this account that the book made a strong appeal to the medical profession, and that it had a very considerable circulation among its members. It was, we said, to be expected that the author would instance the prevention of heart disease, of rickets, and of dental caries, and we welcomed a short essay on preventive surgery, defined as consisting of two parts—reconstruction by anatomical restoration and re-education of function. In the interval much light has been thrown on the prevention of rickets and on the prevention and importance of dental caries, and the information obtained has been practically applied. So, also, orthopaedic surgery has made great strides, and gradually the whole country has been covered with a network of dispensaries and hospitals. In the matter of the prevention of heart disease we have not got very far, but the subject has been more fully discussed than ever before, and facts and opinions have been brought to a focus in the report of the sub-committee appointed by the British Medical Association, which is published in the Special Supplement to this issue. As we have observed elsewhere, it will, we trust, mark a transition from discussion to action. Incidentally, it may

the second edition of his famous work the *Traité d'Auscultation*, will be attended by many foreign delegates. The treasurer of the Paris celebration is M. P. Masson, 120, boulevard Saint-Germain, to whom subscriptions should be sent.

THE VENTILATION OF HUMID WEAVING SHEDS.

WORKERS engaged in cotton weaving have frequently raised strong objections to the artificial humidification of the air in the weaving sheds because of the personal discomfort it entails. Unfortunately it is difficult to abolish it, as it greatly increases the efficiency of the weaving process owing to its influence on the breakages of the warp threads. In Report No. 37 of the Industrial Fatigue Research Board Mr. S. Wyatt, who was assisted in his investigation by Mr. J. A. Fraser and Mr. F. G. L. Stock, has shown that the discomfort due to humidification can be very greatly diminished by installing electric fans in the sheds. Such fans were found to increase the air movement so much that the cooling power of the air, as estimated by the dry kata-thermometer, was raised from 4.2 to 5.6. Expressed in other words, the cooling power of the air was greater at a temperature of 80° F. when the fans were running than at 72.5° when they were stopped. The increased air movement produced by the fans had no significant effect on the number of warp breakages, and, indeed, the output of the weavers was distinctly increased on the days when the fans were running. This effect was specially noticeable on days when the temperature or the humidity was unusually high, the output being increased some 10 to 20 per cent. towards the end of the work spells. A statistical analysis of the results obtained at different temperatures and humidities showed that the highest output from the looms was obtained at a temperature of about 74° and a relative humidity of 77 per cent. Though higher temperatures and humidities reduced the number of warp breakages, yet their adverse influence on the workers themselves was more than sufficient to discount the better physical conditions for weaving. Though the installation of electric fans is rather expensive, it is probable that a number of small fans operated mechanically by the looms could be substituted. The cost of running such fans would be almost negligible, and they would have the additional advantage that they could be switched on and off at the discretion of the individual weaver.

THE EMPLOYMENT OF SUGGESTION IN SURGERY.

WE have frequently had occasion to mention the publications by Victor Pauchet, surgeon to St. Michael's Hospital, Paris, dealing with practical surgery, and we have recently reviewed his work *Practical Surgery Illustrated*, first in the original French and later in its English translation. An article by him on the use of psychotherapy in surgery has been published in the May issue of *Minnesota Medicine*; in it he recommends the combination of suggestion with certain physical methods, and describes the treatment of a case of extreme gastroptosis in which an operation was inadvisable owing to debility, emaciation, and acidosis. The patient was given a spirometer and was encouraged to record the increasing lung capacity, with the consequent improvement in appetite and general condition. The amount of air exhaled rose from 200 c.cm. to 2 litres in a fortnight, and to 3 litres later; recovery was completed without surgical treatment. Pauchet recommends the use of the spirometer on these lines for such other conditions as salpingitis which necessitate confinement to bed, resulting in muscular atrophy, the accumulation of fat, and diminished will power. He finds suggestion valuable also in pre-operative and post-operative treatment, and emphasizes the importance of removal from the patient's environment of any relative or nurse whose influence is depressing. Friction and massage should be supplemented by voluntary deep breathing. Pauchet lays stress on the effect of long-standing disease upon the patient's mind and spirits. Continued pain, chronic toxic absorption, prolonged debility, and repeated surgical operations result in changes in the metabolism, endocrine insufficiency, and deterioration of the character and will power. Such patients require mental re-education and respiratory exercises, in addition to the more specialized treatment. Such physiotherapy and psychotherapy, Pauchet adds, will aid the beneficial action of surgical and medical measures if the practitioner recognizes that the action is a personal one, and that the healer, rather than the method of healing, is the essential factor.

PAY OF R.A.M.C. OFFICERS.

MUCH satisfaction will be felt by the publication this week of the Army Order regarding the rates of pay and retiring gratuities of the medical services, the details of which we give in another column. Our satisfaction is all the greater because the British Medical Association was in a considerable measure instrumental in bringing about the change of attitude towards the medical services which His Majesty's Government has now displayed. But we ought also to recognize the influence of the late Director-General, Sir William Leishman, in the fact that effect has now been given to proposals with which, we believe, he was always in entire sympathy. The increases in the rates of pay and retiring gratuities are substantial, as will be readily seen in comparing the new rates with the old rates promulgated by Royal Warrant after the war. But both the old rates and the new rates, as will be observed, are subject to the 5½ per cent. reduction owing to the decrease in the cost of living. The increases in pay do not begin until after six years' commissioned service, but from that time onwards, especially in the rank of major, very much has been done to make the service more attractive. One of the chief grievances, it will be remembered, was the fact that a major, after three years in that rank, or fifteen years' commissioned service, got no increase of pay until he was promoted to the rank of lieutenant-colonel, a promotion which might possibly not take place until he had as much as twenty-four years of service. The new Warrant gives him a steady increase of pay, not only after fifteen years' service, but also after eighteen or twenty years' service. The ranks senior to that of major also participate in very substantial concessions, and this although their case was not so hard as that of the majors. The Director-General's position, however, was not so good as that of other officers of his rank. This has been remedied, and instead of receiving a consolidated pay of £2,500 a year, he is now placed on exactly the same footing as other lieutenant-generals, being granted the pay and allowances of that rank. The retiring gratuities of a major after three and six years' service are now perhaps so great as to induce officers to retire before they become eligible for a pension, but in that case it is hoped that they will only make room for a large influx of junior officers to carry on the duties that are now being performed by those more senior in the service. The British Medical Association held out strongly for the removal of a serious grievance in regard to the retiring pension of an officer after twenty years' service, and it pointed out that it was possible in the future for a major to have to retire on a less pension than £1 a day, which had been granted to him from time immemorial. The new Warrant relieves him of anxiety in this respect, and explicitly states that his pension cannot be reduced below that amount. Although we are not prepared at present to comment further upon the effect of these changes in the Army Medical Services, as there may be one or two points that are still worthy of consideration,

sites, however, is small in comparison with the size of London and of Greater London, which is always extending its growing edge. London requires an increase of 2,000 acres a year to house the normal increase of its population. But the ugly suburbs of the past need not be reproduced; not only must new dwellings be judiciously and hygienically distributed, but the beauty of the country must be saved as far as possible. The preservation of open spaces in advance of development is an urgent problem which, although possibly worse in London, is acute also in other large towns. If land is not ear-marked shortly for the purposes of open spaces the development induced by town planning will increase the price that must be paid for it. There seem to be two alternatives—namely, suburbanization, which, as we pointed out some months ago, must be effectively controlled if the mistakes of the past are not to be repeated, and satellite towns. If prompt action be taken a more or less complete ring of park land for purposes of recreation could probably be provided within nine miles of Charing Cross. Many hold that London is already many times too big, and that the problem of the future extension of the metropolis could best be solved by the creation of satellite towns on the lines of the Letchworth and Welwyn garden cities. By the extension of suburbs which has already occurred, London workers now have to go further and further out, and a longer and longer journey twice a day is necessitated. The expense, the waste of time which might otherwise be spent in healthy exercise, the fatigue induced by travelling in oscillating and noisy trains, the effects of vibration on the central nervous system, the respiratory diseases contracted during inclement weather by waiting on draughty platforms, the spread of communicable diseases by overcrowding in railway carriages—these are some of the drawbacks of the present system. The difficulty created by the fact that workers, including clerical workers in what may loosely be called Central London, need to live far out was very noticeable during the general strike. In a satellite town life might be more like that of the old provincial town, with its larger measure of peace and repose and home life, absence of hurry, the walk to and from work, the midday meal at home, and the quiet, calm performance of the daily task. The satellite town contains not only homes for workers, but factories for them to work in, and commerce and business to engage other members of the family. Fortunately, the problems are being considered; legislation has been promised concerning areas already built on, and in reply to a recent deputation on the need for a comprehensive scheme for the development of London and the Home Counties the Minister of Health expressed the opinion that a plan prepared by impartial experts, and not by a body composed of interested parties, might be generally acceptable; he also promised to convene a conference, if the willing consent of the local authorities could be obtained.

THE RENAISSANCE OF MEDICINE IN CZECHO-SLOVAKIA.

THE revival of the study of medicine in Czecho-Slovakia since the war is the theme of a special medical supplement of the *Central European Observer*, a weekly journal published in Prague. Dr. Charles G. Reinhorn of Montreal, operator in the first surgical clinic of the Charles University of Prague, gives a summary of the history of the country, which has been known successively as the Moravian empire, the kingdom of Bohemia, and now Czecho-Slovakia. He points out also that near Carlsbad is one of the principal sources of radium; that mineral waters are found at Karlsbad, Marienbad, Franzensbad, Joachimsthal, Pistany, and elsewhere; that a new hygiene institute has been established; and that the gymnastic society, Sokol, is the greatest in the world. Professor Ladislav Syllaba, president of the Czech Medical Society, writes a historical sketch of the medical profession in Czecho-Slovakia. He shows how the attempts at development in medical science were handicapped by the obstruction of the Government at Vienna, and describes the efforts of the famous physiologist, whose name, it appears, should be written Purkyně, after a measure of freedom had been obtained for the country about 1860. Owing to the opposition of Austria it was impossible to establish a second Czech university until after the war. Now there is a third, as well as numerous medical societies; and many medical textbooks and periodicals have appeared. These developments have been assisted by the Rockefeller Foundation, through which also the new Hygiene Institute was made possible. According to Professor Syllaba, the Czechs desire to have a national science of their own to enable their intellectual life to develop all round, and at the same time they wish to be closely connected with world ideas. One of their difficulties in realizing this ideal is to be found in their language. Further articles in the special supplement deal with the history of Czech surgery, the Czech clinic of obstetrics and gynaecology, the educational work of the Jedlicka institute for cripples, the clinic for oto-rhino-pharyngology, the institute of plant physiology, and the Czecho-Slovakian spas and health resorts. The visit of a party of English medical men to some of these spas, in connexion with the annual meeting of the International Society of Medical Hydrology, was described in the BRITISH MEDICAL JOURNAL of June 19th, 1926 (p. 1045). The special medical number of the *Central European Observer* is illustrated with photographs of Prague and its institutes and clinics. It was published on the occasion of the visit of the members of the Inter-State Post-Graduate Assembly of America to Prague in June.

THE CENTENARY OF LAËNNEC.

THE centenary of the death of Laënnec is to be celebrated in France, both in Brittany, where he was born and died, and in Paris, where he lived and worked. Laënnec, who came of a family most of whom practised some profession, and many of them the law, was the son of a barrister, and was born at Quimper on February 17th, 1781. While still working in Paris he acquired and partly rebuilt the manor of Kerlouarnec, at Ploaré, near Douarnenez, which is not very far from Quimper, and to this secluded spot he had retired in June, 1826. His death, which, as is well known, was due to phthisis, occurred on August 13th in that year. The celebration in Brittany is to take place on August 12th. There will be a service in the parish church, and the Bishop of Quimper will preach a sermon; afterwards a procession will be formed to visit the cemetery, where speeches will be made—the first by Dr. Mével of Douarnenez, the second, in the Breton language, by M. Poulhazau (advocate), and the third by Professor Chauffard (the president of the centenary committee formed in Paris). Then there will be a banquet; after that a visit will be paid to the manor of Kerlouarnec, where the present owner, who is the mayor and a councillor-general, will make a speech. We should imagine that a visit to this part of Brittany, which is close to the sea—in fact, the manor house looks out on the sea—might be very pleasant if the weather is kindly. Apparently English visitors will be welcomed, and can find hotel accommodation either at Douarnenez or at Quimper. Rooms ought to be secured before August 1st. Those who wish to go to the banquet must send a subscription of 20 francs ten days in advance to M. le maire de Ploaré, par Douarnenez (Finistère). The celebration in Paris will take place in December (13th, 14th, and 15th); it is being organized by the Academy of Medicine, which has appointed a committee with Professor Chauffard as president. We are informed that this celebration, which will commemorate both Laënnec's death and the publication of

MEDICAL WORK IN KENYA COLONY.

REPORT FOR 1924.

As is made plain in the recently issued report for the year 1924,[1] the activities of the Medical Department and Medical Research Laboratory in Kenya Colony have been sadly hampered for lack of funds in these hard times. Out of a total expenditure bordering on £2,000,000, the Kenya Legislative Council allotted some £127,000 to the Medical Department for the year, not all of which, for various reasons, was expended; rather more than £12,000 was collected as revenue by the department.

The report gives a full and statistical account of the work done by the whole Medical Department, and contains a quantity of information that should be of great interest to the medical men working in a number of our colonies.

The treatment of yaws and syphilis, two diseases it is generally impossible to distinguish, with intramuscular injections of sodium potassium bismutho-tartrate continued to give good results in the native population, and was highly appreciated by its recipients; over 56,000 cases were treated. Plague, which is endemic in Kenya Colony, was less in evidence than it was in 1923. The report states that in the Central and North Kavirondo districts, where the incidence of plague was greatest, a campaign against rats has been carried out since July, 1921; some five million had been destroyed down to the end of 1923, and over 1,300,000 in 1924. It is unfortunate that it has been found impossible to draw any general conclusions as to the effect of this destruction of rats on the incidence of plague in these districts; there was less plague in them during 1924, but the same was the case in the rest of the colony generally. Malaria is always the cause of a great deal of acute and chronic sickness in Kenya Colony, and 19,000 cases of it were treated in the Government hospitals and dispensaries, with 40 deaths; examination of blood smears in the laboratory showed 308 cases of subtertian, 47 of benign tertian, and 19 of quartan malaria. An interesting series of cases of subtertian malaria, in which the temperature remained normal or subnormal, was observed in the native hospital at Nairobi; it is said that clinically there was little to suggest malaria.

Of undulant (or Malta) fever there were 14 cases; it appears that the bacillus of contagious abortion in animals (*B. abortus* Bang) is capable of infecting human beings with undulant fever, and the report adds that the relationship between the *Micrococcus melitensis* and the *Bacillus abortus* in Kenya requires investigation. For the first time in the history of the colony diphtheria was encountered in 1924, there being 11 cases (6 in Europeans, 2 in Asiatics, and 3 in Africans), with no deaths; the cases were sporadic.

Full details of the provisions made for the health of contract labourers in the colony and of the labour employed on railway construction are given, with figures showing the good effect of these provisions in the case of the latter. The report contains full accounts of the sanitation work, the work in maternity and child welfare, school inspection, the work of the Government hospitals, dispensaries, and institutions generally, that cannot be further noticed here, together with many pages of statistical returns.

The annual report of the Medical Research Laboratory at Nairobi shows that the time of its staff was mainly occupied with routine clinical examinations during 1924; in addition 124,000 doses of plague vaccine, 225,000 doses of sodium potassium bismutho-tartrate for the treatment of yaws, and 123,000 doses of calf lymph were turned out. Specimens from no fewer than 17 cases of malignant disease in natives were received, as compared with 5 in 1923, 5 in 1922, and 2 in the eight previous years. This increase coincides with the opening of new dispensaries and hospitals in the native reserves, and seems to show that malignant disease is not unknown (as is so often stated) among primitive and uncivilized races. Examination of over 250 samples of the milk from native humped cows showed an average of 14 per cent. of solids, of which 4.6 per cent. was fat; the average specific gravity was 1.033. It is of interest to note that up to 88 per cent. of water was found in specimens of *Podocarpus* timber, a wood much used locally in carpentery and joinery work and distressingly given to warping when set up. Finally it may be mentioned that salts of zinc were found constantly in the water of the Nairobi water supply, and that experiments made by the analytical chemist seemed to show that the zinc came from the lining of the "galvanized" water piping employed, being dissolved by the carbon dioxide contained in the water. Removal of the carbon dioxide by adding a proportion of lime to the water prevented this solution of the zinc lining of the papers. The occurrence of pipes (from kitchen boilers) blocked with a deposit of zinc carbonate is recorded.

The report, printed by a local firm, is well turned out; and its contents show that, in spite of the obstacles imposed by a restricted finance and the many discouragements met with by scientific workers in newly developed lands, the Kenya Medical Department did admirable work during the period under review.

[1] The Annual Medical Report of the Colony and Protectorate of Kenya for 1924. Nairobi: Swift Press, Ltd. 1926. (Pp. 113, with tables.)

England and Wales.

JUBILEE CONGRESS OF THE ROYAL SANITARY INSTITUTE.

THE Royal Sanitary Institute, as already announced in these columns, is celebrating its jubilee by holding an imperial congress in London from July 5th to 10th. The congress is meeting under the presidency of the Minister of Health (the Right Hon. Neville Chamberlain), who will deliver an inaugural address at the Guildhall on the opening day. About one thousand delegates are expected to assemble, representing Government departments, municipal authorities, learned societies, and the universities; many are also coming from the British dominions and foreign countries. The congress is to meet in six sections and seven conferences. One of the sections, that on sanitary science and preventive medicine, is to be presided over by Sir George Newman; another, on school hygiene, by Lord Eustace Percy, President of the Board of Education. The other sections are concerned with engineering and architecture, personal and domestic hygiene, the hygiene of food, and the hygiene of industry. The conferences include one of representatives of sanitary authorities, under the presidency of the Lord Mayor of London, and one of medical officers of health, with Dr. G. F. Buchan, the medical officer of health for Willesden, in the chair. One session of the congress is to take place jointly with the Maternity and Child Welfare Conference, which is being held in London during the same week. The subject for discussion at this joint conference will be midwifery in the homes of the people, and the medical speakers announced are Dr. E. Kaye Le Fleming, representing the British Medical Association, Dr. T. Watts Eden, and Dr. W. Allen Daley, medical officer of health for Hull. The other discussions of the congress—about sixty subjects are set down—cover a very wide range, from concrete houses to the advantages of cremation, and from the trade pasteurization of milk to health administration in relation to Poor Law reform and national health insurance. Several of the discussions will deal with aspects of medicine, and one, which might be very interesting, is on preventive medicine and the press. The discussions are arranged for the mornings, and in the afternoons there are to be visits to various places of sanitary interest in and around London. Several social functions are also planned, and among those who are giving evening receptions or garden parties are the Duke of Northumberland (president of the Royal Sanitary Institute), the Marquess of Salisbury, and the Lord Mayor and Corporation of London.

BRITISH HOSPITALS ASSOCIATION AT PORTSMOUTH.

At the annual meeting of the British Hospitals Association, which opened at Portsmouth on June 24th, a welcome was given to the delegates by the Mayor, who referred to the strong support by the city of Portsmouth of the voluntary hospital system. Mr. H. L. Eason, medical superintendent of Guy's Hospital, opened a discussion on the suggested pensions scheme for hospital officers and

more especially as regards limiting the period during which a lieutenant-colonel remains in that rank before going on half-pay or retired pay, we hope that the concessions now made will bring about a marked change in the number of candidates applying for commissions in the Royal Army Medical Corps. We have still to see how far the Indian Government will accept the new rates for R.A.M.C. officers serving in India. One important point should be noted—namely, the concession by which a newly qualified medical man can hold a hospital appointment for one year before entering the service, counting it as a year of service towards promotion and retirement. Previously this concession was only given after the officer had entered the service. This was one of the points that was strongly brought forward in the evidence submitted by the Association to the inter-departmental committee, and should give special satisfaction to members of the medical profession. As we have been more concerned recently with the grievances of the R.A.M.C. than with those of the other services, we refrain from commenting at present on the concessions granted to the Royal Navy and Royal Air Force Medical Services; but it will be seen that both of these services have also benefited considerably by the recommendations of the committee.

MEDICAL CHARITIES AND INCOME TAX.

THE decision of Mr. Justice Rowlatt in the case of two medical charities deserves more attention than considerations of time and space permitted us to pay to it last week (p. 1107). The societies concerned were the Society for the Relief of Widows and Orphans of Medical Men and the Medical Charitable Society for the West Riding of Yorkshire, and the circumstances of the two cases were sufficiently similar to enable them to be argued and decided together. That the matter was one of real importance is indicated by the fact that in the former case alone a sum of about £800 a year was involved. The contention of the societies was that they had become possessed of funds by way of legacy, donation, and subscription which they held for clearly defined purposes—briefly, for the relief of indigent members or their dependants—and that the income derived from their investments had to be, and was in fact, so applied, that those purposes had been recognized by the Court of Chancery as "charitable," and therefore that the societies were entitled to the exemption provided in the income tax Acts for income held on trust and applied for charitable purposes only. Counsel for the Crown relied in the main on the argument that in substance the societies were carrying on provident and benevolent institutions rather than acting as trustees of a charity, the suggestion being that as the grants made to members or their dependants were met in part from subscriptions of themselves and other members, it was to that extent a semi-contractual arrangement for mutual assistance among a definite group of persons, and that consequently the funds were not held on trust "for charitable purposes only." Mr. Justice Rowlatt did not accept that view. As he pointed out, it was true that doctors were invited to qualify for contingent relief by these societies, but the funds were in the hands of trustees who, of course, were bound to discharge the duty of granting relief faithfully. It seemed to him that there was in those societies the element of relief of poverty outside the contractual relief of poverty, and he held that both were charitable. The medical profession, and doubtless other professions too, are to be congratulated on the result of these cases. If income tax were payable on the income of such societies it would grievously cripple the very important and beneficent work they are doing, not merely because it would seriously reduce the income immediately available, but also, it is to be feared, by its effect on future donations and bequests. The modern representative of the old "pious benefactor" is frequently a shrewd man in his charities as well as in his profession, and it is only to be expected that in selecting the channel by which his benevolence is to seek an outlet he will avoid one which is liable to be tapped to the extent of 20 per cent. for income tax. Such societies do an excellent work in gathering together donations and bequests, as well as subscriptions, into one fund, and then effecting the distribution of the income with care and knowledge; it would have been a matter for keen regret if an adverse decision of the court had impeded their continued and successful activity.

OXFORD OPHTHALMOLOGICAL CONGRESS.

THE annual Ophthalmological Congress in Oxford will be held on July 15th, 16th, and 17th. The members will dine together at Keble College on the evening of Wednesday, July 14th, and will start work in the Department of Human Anatomy of the University Museum at 10.15 a.m. on Thursday, when Mr. Philip H. Adams, surgeon to the Oxford Eye Hospital and Master of the Congress, will give a brief opening address; this will be followed by a discussion on sympathetic ophthalmia, introduced by Mr. Malcolm Hepburn, surgeon to the Royal London Ophthalmic Hospital, and Mr. S. H. Browning, bacteriologist to the same hospital. Mr. Hepburn, considering the fear of the older generation of surgeons that sympathetic inflammation may develop many years after an accident, and believing that that is not now the general opinion of ophthalmologists, will urge the necessity for some scientific method by which cases due to sympathetic inflammation and those due to other causes may be distinguished, and that operation can properly be undertaken for the relief of symptoms in the injured eye. Mr. Browning will deal chiefly with the differential blood count in sympathetic inflammation as a guide to the decision whether an eye should be removed. In this discussion Professor Emile De Grosz (Budapest) will take part. The afternoon will be filled chiefly by attending a number of demonstrations, and the annual dinner will take place in Keble College in the evening. On Friday morning addresses will be given by Dr. George Young (Colchester) and Dr. Marion Gilchrist (Glasgow), and Mr. Thomson Henderson, surgeon to the Nottingham Eye Infirmary, will deliver the Doyne Lecture on the anatomy and physiology of accommodation in mammals. At the Oxford Eye Hospital in the afternoon Lieut.-Colonel Henry Smith, C.I.E., I.M.S., will open a discussion on intracapsular extraction of cataract. On the morning of Saturday, July 17th, Dr. T. S. Good, medical superintendent of the Oxford City and County Mental Hospital, will give an address on psychology and the eye, Dr. T. Harrison Butler will speak on inflammation of the eye as seen by the slit-lamp, and Dr. Margaret Dobson on ophthalmoscopy of the macular region by red-free light. During the congress an exhibition of ophthalmological instruments and apparatus will be held in the Department of Human Anatomy. The subscription to the congress is one guinea, which should be sent to the honorary secretary, Mr. Bernard Cridland, Salisbury House, Wolverhampton, who will supply fuller particulars about the congress.

WE regret to announce the death, after a brief illness, of Mr. W. H. Clayton-Greene, who retired a year or two ago from the post of surgeon and lecturer on surgery at St. Mary's Hospital, and went to live in Guernsey.

THE Home Secretary has appointed Sir Hugh Anderson, M.D., F.R.S., Master of Gonville and Caius College, Cambridge, to be a member of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in the place of Sir John Rose Bradford, M.D., F.R.S., who resigned from the committee upon his election as President of the Royal College of Physicians of London.

NURSES' HOME AT THE RETREAT, YORK.

The Retreat, York, was originally established in 1792 by the Society of Friends as a mental hospital, and is an important training school for nurses. A new home for nurses has now been erected at a cost, including fittings, of about £18,000. The building, which is in brick, with a green Westmorland slate roof, stands on an open site, with a rose garden and tennis lawns on the south front, and two hard courts on the west side. It provides accommodation for about sixty nurses and sisters. One wing on the second floor is designed for cases of illness; the ground floor contains separate sitting and dining rooms for the sisters and nurses, and a reading room. Dr. Bedford Pierce, lately medical superintendent, who opened the home a short time ago, referred to the great improvement during the last thirty years in mental nursing. Nowadays each probationer received a technical education, and a great gain in efficiency resulted. The Retreat was almost the first mental hospital to insist that all nurses must take a course of training, and was still the only one which provided that this course should last four years. Owing to the special circumstances of mental nursing the question of general education was even more important than in sick nursing. The nurses should be encouraged to do post-graduate work after registration, and one of the subjects qualifying for a further diploma should be occupational therapy. It was obvious that mental nurses even more than those engaged in general nursing needed reasonable comfort, privacy, and opportunities for study and recreation. Their work demanded perfect fitness of both body and mind, and, therefore, every attempt should be made to give them the best possible environment.

FIRE PRECAUTIONS IN HOSPITALS.

A memorandum[1] has been prepared by the management committee of King Edward's Hospital Fund for London dealing with fire precautions recommended for hospitals. While the Fund considers that the responsibility for proper provision in case of fire rests with hospital committees, it is thought that notes on the prevention of fire on the lines of those first prepared for the Fund in 1907 would be of service to hospital committees in deciding whether the fire precautions at individual hospitals are adequate. The recommendations relate to the prevention of fire due to oil, gas, electrical appliances, heating pipes, boilers, and open fires, and it is suggested that the obligation of making periodical inspections and reporting possible fire risks should be placed on a competent resident official, who should be specially selected and have charge of the appliances. Suggestions are made as to various forms of extinguishers and the method of giving the alarm in the case of fire. The memorandum has been drawn up in consultation with Mr. A. R. Dyer, chief officer of the London Fire Brigade.

[1] K.F. 20/26. *Fire Precautions at Hospitals.* London: George Barber, 3, Furnival Street, E.C.4. Price 6d. net, post free.

Scotland.

PROBLEMS OF THE BLIND.

At the annual conference of the Scottish National Confederation of Societies for the Blind which was held at Dumfries last month it was reported that an enormous increase had taken place in the number of blind persons under the charge of outdoor societies. In 1920 the number of persons on the rolls of such societies in respect of whom a grant was paid by the Board of Health in Scotland was 3,512; at the end of September, 1925, the number was 5,329, an increase of approximately 52 per cent. The number of teachers had not increased in proportion, for in 1920 there had been twenty whole-time and five part-time teachers, while in 1925 there were twenty-nine whole-time and three part-time teachers. The State and the local authorities under the Act of 1920 have conferred very considerable financial benefits on blind persons and on voluntary agencies for their help, and at the present time the payments made in this way amount to very nearly £100,000 a year. This sum does not include money paid by Poor Law authorities either for outdoor relief or for technical training, nor does it include the money paid as old age pensions. Dr. Freeland Fergus of Glasgow read a paper dealing with the cause and prevention of blindness. He said that the value of investigations into causes of defective eyesight was chiefly that some forms of eye disease might be found to be preventable. For the last thirty years he had maintained that persons who were going to deal with eye patients should be as thoroughly trained for their work as were medical officers of health. He blamed the General Medical Council for having failed to take any action in this matter. A large number of ophthalmic practitioners were now employed for school work and for panel practice, and all persons so employed ought to have had a special training. He believed that the General Medical Council had been supine in this matter, and he thought, therefore, that the Ministry of Health ought to take the matter in hand; committees to whose care the blind of the community had been entrusted should see to it that this matter was put right. Dr. Fergus referred to the difficulty of treating senile cataract. Out of 121 patients he had found blind from this cause in Glasgow, no fewer than 60 had never been operated upon, and the remaining 61 had been operated upon without success. About 360 senile cataract operations were performed annually in the two Glasgow eye hospitals, and the results in the remaining cases were probably very satisfactory and certainly infinitely better than they were forty or fifty years ago. It was a credit to the public health authorities that only five persons out of 1,200 should have been found blind after small-pox and only one after erysipelas.

The Royal Blind Asylum and School at Edinburgh held its 133rd annual meeting in Edinburgh on June 17th. The Rev. Dr. Burns, chairman of directors, said that the annual report showed that greatly increased interest was being taken in the welfare of the blind, both as regarded the industrial department and the department for technical instruction and education. In the training department twenty-one blind persons had been admitted during the year, and at present fifty-six were being trained. The educational department now had students attending the University and the Provincial Training College to qualify as teachers. The Lord Provost, in moving the adoption of the report, said that the town council had a special interest in the work of the Royal Blind Asylum in virtue of the provisions of the Blind Persons Act of 1920. Last year the city had contributed over £2,000. The financial needs of the institution, however, tended to increase on account of the greater number under training, who came from all parts of Scotland. The directors were at present considering the question of providing a residential home for blind women, for which the need was very urgent.

The annual report of the Scottish National Institution for Blinded Sailors and Soldiers shows that since the institution was founded in 1915 no fewer than 101 blinded ex-service men had been already settled in life, and 30 more were in training. The Lord Provost, who presided at the annual meeting on June 23rd, drew attention to the fact that admissions are still being made and that there is no likelihood of these ceasing in the near future. The after-care men were doing well, some of them exceptionally well, as shopkeepers, boot repairers, poultry farmers, and in other trades to which they had been trained. The institution now owned seven houses with grounds attached, situated in various parts of Scotland, which were occupied by blinded men, and these small holdings were greatly prized by the occupants. These outside men were visited regularly by supervisors who were able to give them and their families help during illness and other occasions of necessity.

TREATMENT OF RICKETS IN GLASGOW.

At the seventh annual conference of the Scottish National Association of Health Visitors, held under the chairmanship of Lady Leslie Mackenzie, Dr. Lewis Cruickshank of the Board of Health gave an address on the subject of ultra-violet ray treatment. He said that very favourable results had been obtained in tuberculosis and in rickets. Dr. Banks, medical officer of

nurses. Referring to the controversy which had been started by the publication of the scheme, he said that it did not seem just for a voluntary hospital, while appealing for funds as a charity, to carry on its work at the expense of its paid servants, particularly since the King's Fund in its revised uniform system of accounts had recognized pensions as a legitimate part of the annual expenditure of a voluntary hospital; but out of 105 hospitals in London which were in receipt of grants from the King's Fund, not more than six had a general pension scheme. The Whittall Committee had come to the conclusion that hospital officers resembled university teachers as regards migration, and that a federated superannuation scheme on the lines of the parallel scheme for university teachers was the correct solution of the problem. After considering various schemes it had rejected all the mutual schemes and decided in favour of the insurance method. Mr. Eason then discussed the scheme of pensions for hospital officers and nurses suggested by the King's Fund,[1] and commented on certain of its features. He thought it essential that hospital officers should have alternative benefits, since a single man at the end of his career might prefer to have a pension, while a married man with a family might, on the other hand, quite rightly desire to receive a capital sum on his retirement, which he could invest for the benefit of himself and his children, satisfying himself with a smaller income during his life in order that a better provision might be made for his family after his death. Mr. Eason then discussed in some detail the question of contributions towards nurses' pensions and the time at which they should start. In conclusion, he referred to the arduous nature of the nursing career, and added that from October, 1918, to December, 1925, 1,466 nurses had required and received assistance from the national fund; special monetary grants had been made in 1,231 cases, and 30,907 weekly grants had been provided. At the present time 170 nurses were receiving weekly grants, and 130 pensions were urgently required, as the nurses concerned were so incapacitated that they could not be removed from the fund. He believed that a claim for additional support for the purpose of providing pensions for nurses would meet with the readiest response from the charitable public.

Orthopaedic and Sunshine Treatment Centre in Oldham.

The town of Oldham is to have an orthopaedic and sunshine treatment centre through the generosity of Mr. Richard Greenhalgh of the Vulcan Iron Works. Mr. Greenhalgh has purchased a building in Oldham, and has offered it to the corporation on certain conditions. These are: that the benefit of the institute shall be available to the general public of Oldham, Royton, Chadderton, Lees, and Shaw; that gratuitous patients shall not occupy more than 50 per cent. of the working hours of the institute, the other 50 per cent. being devoted to people who pay a fee to cover the net cost of treatment; that the Health Committee of the corporation shall maintain the institute and pay a rent of £10 a year; and that a provisional lease of three years shall be granted to the Health Committee, at the end of which time the usefulness of the institute shall be reviewed. On these conditions the institute will be fully equipped ready for use. Subject to the conditions stated the offer has been accepted by the corporation of Oldham.

Puerperal Fever.

The Minister of Health, it appears, is satisfied, as the result of inquiries, that further special facilities are required in London for nursing and treatment of puerperal fever, with a view to reduction in the mortality from this disease. It has been arranged that in future patients with puerperal fever referred to the Metropolitan Asylums Board shall be concentrated, as far as possible, in the North-Western Fever Hospital at Hampstead, the Eastern Hospital at Homerton, and the South-Western Hospital at Stockwell. Special wards with special medical and nursing staffs will be set aside for these patients. An obstetric consultant has been appointed at these three institutions. The medical officer of health for Hampstead (Dr. F. E. Scrase) has informed the medical practitioners in his borough that if they will notify cases to him at the earliest possible moment, and if they desire the patient's removal to hospital, he will arrange immediately for the transfer of the patient to the Metropolitan Asylums Board hospital.

[1] BRITISH MEDICAL JOURNAL, 1925, vol. ii, p. 1195.

The Forbes Fraser Hospital, Bath.

A further step towards the completion of the Forbes Fraser Hospital, Bath, was taken on June 23rd, when Sir Anthony Bowlby, Bt., F.R.C.S., opened the new nurses' home. We described the general plan of the new hospital on July 26th, 1924 (p. 150), and mentioned the further developments contemplated, including the provision of a nurses' home. The mayor, who took the chair at the ceremony, gave an account of the way in which the money for the home had been raised. The memorial fund donations amounted to £2,563, and Mr. Stanley Wills gave £5,000. As the result of a fête held in the spring, £575 had been received, and donations to the amount of £250 had been collected. A sum of £2,200 was, however, still required for some of the furnishing and other expenses. Sir Anthony Bowlby referred appreciatively to the value of the work of the late Mr. Forbes Fraser, who was largely responsible for designing the hospital scheme and for bringing it into fact; the new nurses' home was intended as a special memorial to him.

Care of the Mentally Defective.

The sixty-seventh annual report of the Royal Eastern Counties Institution for the Mentally Defective at Colchester gives an account of the progress made in 1925, and the improvements and extensions proposed to be undertaken with the help of the county councils of Essex, East and West Suffolk, and Cambridgeshire. It is intended to add about 1,000 beds to the existing accommodation, and a building for 444 will shortly be begun. From the report of the medical superintendent, Dr. F. Douglas Turner, it appears that 1,152 patients were under care during the year 1925, with a daily average of 1,066. Dr. Turner discusses the question of sterilization of mental defectives, and comes to the conclusion that it can serve no useful purpose. He agrees with Sir Leslie Scott, president of the Central Association for Mental Welfare, that a general policy of sterilization would be ineffective; that the freedom accompanying it would harm the defectives themselves; that it would delay institutional segregation, which is the only safe procedure; and that it would fail to provide a safeguard either for defectives or for the community.

Mr. Sandeman Allen, M.P., presided at the annual meeting of the West Lancashire Association for Mental Welfare on June 15th. During the year 660 new cases had been dealt with, and 573 patients in the area were under statutory supervision. The association had assisted in designing work for border-line males in Walton Prison, and, with the help of the Liverpool Society of Handloom Weavers, had started a class for spinning and weaving. An appeal was made for the voluntary side of the association's work, which aims at avoiding deterioration and relapse by arranging holidays and other social amenities. Dr. Stallybrass gave an address on the after-effects of encephalitis lethargica.

The Agatha Stacey Homes at Birmingham assist the State in the care of the mentally defective. The annual meeting was held on June 9th, under the chairmanship of the Lord Mayor of Birmingham. It was stated that the number of mentally defective persons for whom no institution could be found was appalling; and the suggestion was made that by boarding out some of the persons who had passed the "dangerous age" vacancies could be made for girls who needed direct control.

The annual report presented to the meeting of the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded, held at the Manchester Town Hall on June 22nd, stated that during the year the society had added twenty-two acres to its estate, and it was hoped that after certain alterations accommodation for fifty more boys would be provided. There was great pressure for admission of further cases. The accommodation at Sandlebridge was fully occupied, the patients numbering 320; some 217 adults had been in the colony from an early age.

Correspondence.

TUBERCULIN IN THE TREATMENT OF TUBERCULOSIS.

SIR,—In the review of Dr. Camac Wilkinson's recently published book, *The Principles of Immunity in Tuberculosis*, which appeared in the JOURNAL of June 19th (p. 1039), no opinion is expressed as to the merits of tuberculin as a diagnostic and therapeutic agent in cases of pulmonary tuberculosis. After giving Dr. Wilkinson's high opinion of it in both respects it is said, "A very different verdict has been pronounced and is widely accepted." Unfortunately, this statement is true. But it does not follow that the very different verdict is the correct one. In my opinion it has been pronounced by people who have used tuberculin wrongly, and widely accepted by others who have not used it at all.

Wrong use of tuberculin is of two kinds: (*a*) keeping to minute doses (which have no apparent effect on pulmonary tuberculosis) through fear of producing reactions; and (*b*) increasing the doses by some rule of thumb, instead of adapting the rate of increase to each patient.

It is desirable that those who have extensive experience of the use of tuberculin in pulmonary tuberculosis, and who have taken the trouble to follow up their patients and keep accurate records, should now come forward and make known the results of their experience. I therefore venture to give my own experience in regard to some of the propositions from Dr. Wilkinson's book quoted in the review.

I. "Tuberculin is an invaluable and indispensable agent in the diagnosis of early tuberculosis." Tuberculosis dispensaries were opened in county Down in January, 1913. In all cases of suspected tuberculosis that have come for examination to these dispensaries, if tubercle bacilli were not found in the sputum, the tuberculin test by subcutaneous injection has been applied. Six doses are given with negative result before the case is pronounced non-tuberculous. When the six doses have produced no reaction I have great confidence in assuring the patient that he, or she, is not suffering from tuberculosis. This, of course, does not imply that the person cannot subsequently suffer from tuberculosis. In my experience of thirteen years as chief tuberculosis officer for county Down, about 1 in 80 of the patients thus entered as non-tuberculous have afterwards been found suffering from tuberculosis—usually several years afterwards. Of those who were classed as tuberculous because they reacted to the test doses, the symptoms and signs pointing to the lungs as the seat of disease, and who then received at least three months' tuberculin treatment, nearly all made a good recovery.

II. "Pulmonary tuberculosis can be cured with certainty by tuberculin." This statement needs some qualification. According to my experience it is true, or very nearly true, in the cases referred to above, where the diagnosis of pulmonary tuberculosis has been decided by test doses of tuberculin given subcutaneously, if the physical signs be such that the case can be classified as Turban-Gerhardt 1 or 2. Of all such cases diagnosed in the three years 1913-15 by me or my assistants, 86.5 per cent. were alive and at work, or fit for work, in March, 1926. Cases in which there were no physical signs, which I label T.G. 0, are not here included. In cases classed as T.G. (Turban-Gerhardt) 1 or 2, in which tubercle bacilli were found in the sputum, the prognosis is not nearly so good; but the results are in favour of tuberculin treatment, as will be seen from the following table:

Table showing the percentage fit for work in March, 1926, of cases diagnosed as pulmonary tuberculosis in 1913-15.
(T.G. 1 or 2. Tubercle bacilli in all cases.)

Treated with tuberculin at dispensaries at least three months; not at a sanatorium	30.4 per cent.
Treated in a sanatorium at least three months; not treated with tuberculin ...	11.1 per cent.
Treated at neither sanatorium nor dispensary	4.3 per cent.

III. "The use of tuberculin in proper doses as a diagnostic agent is entirely free from danger." With this statement I am in thorough agreement.

IV. "Treatment by tuberculin in many cases allows the patient to attend to his ordinary calling, and has therefore a decided economic advantage." This is also in accordance with my experience.

I can hardly agree with Dr. Wilkinson on one point, however—namely, that "three months' training, notably at a tuberculin dispensary," is necessary for medical practitioners who desire to use tuberculin in the treatment of pulmonary tuberculosis. In a little book on the subject which I published in 1918 I laid down directions by which any intelligent person can estimate how to regulate the dosage in any particular case. When I get a new assistant who has had no previous experience of the use of tuberculin, I put this little book in his hands and tell him to read and re-read it carefully. Then I get him to accompany me to our dispensaries for a week or so, after which I usually find that he can be trusted to carry on by himself.

Several general practitioners in county Down now employ tuberculin treatment in domiciliary cases, pulmonary as well as non-pulmonary, under my direction, with benefit to their patients, using the little book and occasionally asking for guidance.—I am, etc.,

JOHN R. GILLESPIE, M.A., M.D., D.P.H.

Knock, Belfast, June 22nd.

SIR,—Tuberculin has been used as a therapeutic agent in the Dorset County dispensaries since 1914. The cases are for the most part pulmonary, but it is also now and then given to non-pulmonary cases.

It is given on the lines advocated by Dr. Camac Wilkinson—namely, the intensive method, which starts at extremely minute quantities of P.T.O. tuberculin and finishes off, if possible, at 1 c.cm. old tuberculin, human. A few cases are even carried on to bacillary emulsion (B.E.).

The success of this treatment depends on three most important conditions—namely: (1) the earliness of recognition of the onset of disease and freedom from secondary infections; (2) the careful technique and skill of the administrator in properly timing his doses, gauging them according to the strength reserves of his patient, and always avoiding making any overdraft thereon; (3) the conscientious co-operation of the patient himself. This is a *sine qua non* for success, but, alas! too often not obtained. In giving test-dose inoculations, the preparation known as T.A.F. tuberculin is given in preference to old tuberculin.

In my opinion all doubtful cases should be tested, for tuberculin demonstrates, like nothing else, the disease in its earliest stage. Even where the test conditions are not fulfilled a tuberculin sensitiveness may show an equally tuberculous susceptibility calling for suitable prophylaxis.

The great majority of pulmonary patients quite easily tolerate the initial doses of P.T.O. The few who cannot usually show their idiosyncrasy very soon and are then given some other form of treatment. The same may be said of secondarily infected cases. Those of the first class, however, equally soon show improvement, and, moreover, feel it. The delicate, peaky look becomes altered to a harder and more natural expression. The sputum is at first increased in quantity, may possibly have a streak or two of blood in it, and it may then be possible to find tubercle bacilli for the first time. One noticeable effect of this is that the cough, which has been hacking and incessant, becomes greatly relieved. In favourable cases, as the course proceeds, the cough and sputum gradually lessen, the pulse slows down and the temperature runs more evenly. It is at this stage that repeated warnings have to be given to some patients, who foolishly think they are sufficiently well to relax care and precaution. As often as not the result is a bad set-back for the patient and a disappointment to the physician. The danger of this, however, decreases with the increasing tolerance of the bigger doses of tuberculin. In fact, a case that has completed the course and reached 1 c.cm. of O.T. seldom causes me much anxiety if I know that he is carefully regulating his life. His acquired immunity, in fact, is always working on his behalf.

Personally I am convinced that the intensive tuberculin administration so alters the general system as to check the advance of tuberculous disease, and that this checking

health for Motherwell, described the use of the ultra-violet rays at the Carnegie child welfare clinic in the industrial area near Glasgow; the greatest and most important disease of children to be treated there was rickets, and the results obtained by this method had been very satisfactory. Many cases unable to walk had been able to do so after three weeks' treatment, and, in addition, the whole organism of the child had been enormously improved. Rickets was a huge problem at the root of the nutrition and well-being of the industrial population. Dr. Chalmers Smith of Glasgow said that the results achieved in Glasgow had been striking and even dramatic; the incidence of the disease in the city was so great that he thought it would be wise to treat every child as if it had rickets for a month or two before it reached the age of one year.

Campaign against Cancer in Glasgow.

The directors of the Glasgow Royal Cancer Hospital have issued an appeal for funds to purchase radium for use in inoperable cancer. The greater number of the patients in this hospital suffer from the malady in an advanced and inoperable stage; radiation can therefore be given a full trial. The new *x*-ray department of the hospital possesses the latest form of equipment for furnishing deep penetration rays and for the improvement of the general health of the patients, and a room for ultra-violet ray treatment from two arc lamps has been added. Small supplies of radium emanation are obtainable from the West of Scotland Radium Committee, and some encouraging results have been obtained. The cost of radium is stated at present to be about £750 a grain, and as 1 gram would be needed to meet the requirements this would involve an outlay of about £12,000, and it is for this amount that an appeal is now made. Contributions may be sent to the secretary of the Glasgow Royal Cancer Hospital, Mr. H. Muir Lawson, C.A., 156, St. Vincent Street, Glasgow.

Gift to the Infirmary and University of Edinburgh.

At a meeting of the board of managers of the Edinburgh Royal Infirmary on June 21st it was announced that Lady Mary Anne Anderson had bequeathed to the Infirmary the property of Beechmount, a mansion house situated on Corstorphine Hill on the outskirts of the city. The furniture of the house and a sum of £5,000 were also offered to the institution, with the suggestion that the managers use or dispose of them as they might see fit, but that if practicable the mansion should be retained in the possession of the Infirmary to be utilized as a home for officers maimed or invalided in the great war, or for the dependants of such officers. Lady Anderson also left to the University of Edinburgh a sum of £5,000 to be used in assisting the studies of undergraduates attending the University.

Edinburgh Royal Infirmary Residents Club.

The annual dinner of the Edinburgh Royal Infirmary Residents Club was held in the North British Station Hotel, Edinburgh, on June 25th. Dr. C. E. Douglas (Cupar) presided over a company of past residents numbering about a hundred. The usual toast of "The Residency" was submitted by the chairman, who in the course of his address gave interesting reminiscences of Lister, Joseph Bell, Syme, Spence, and other teachers in the seventies of last century, with whom he had been associated as a student and house-surgeon.

Ireland.

Royal Medical Benevolent Fund.

THE annual meeting of the Royal Medical Benevolent Fund Society of Ireland was held recently at the Royal College of Surgeons, Dublin, with Mr. T. E. Gordon, M.B., F.R.C.S.I., in the chair. The report of the Central Committee set out that the number of grants awarded during the year was eighty-five, as compared with eighty-six in the preceding year. The amount disbursed in grants was £1,747 11s. 8d., as compared with £1,755 in 1924-25. The statement of accounts showed that the income of the general fund was £2,390 11s. 10d., as compared with £2,097 1s. 6d. in the previous year. The British Medical Association sent £54 4s., collected through its organization. A further cheque for £50 has been received from the British Medical Association, making a total grant of over £100 to the funds since January last. Donations amounted to £31 10s.; the Irish Medical Association contributed £10, and the Dublin Clinical Club £5 5s. Two legacies were received during the year. The late Dr. William Hennessy of Galbally left the sum of £100 for the purpose of providing an annuity of £5, or whatever that sum invested will be found to produce, for the benefit of widows or orphans of medical men, to be called the "Hennessy bequest"; and the late Mrs. E. Thompson of Kingstown bequeathed £100 to the Fund. Thanks are expressed to Dr. T. Hennessy, T.D., and to Mr. Herbert Dudgeon, the executors of these respective estates, for the work entailed. These sums, together with a further sum derived from recovered income tax, have been invested in War Loan Five per cent. Stock, 1927-49, to round off the holding in that security to the even figure £4,000. The Osborne fund being still in debt to the general fund, no grants have been charged against it; the debt has now been reduced to £4 9s. 2d. In concluding its report the committee points out that "while receipts from dividends and interest during the past year amounted to £1,079 4s. 11d., our normal subscriptions income was but £646 2s. 6d., a rather remarkable contrast between the contributions of the dead and of the living. We recognize with gratitude the liberality of those who subscribe, but we deplore the fact that so many contribute nothing. Could the mass of the profession but realize how much the grants of the society mean to the recipients—comforts otherwise beyond their reach, clothes for themselves or for their children, and in some cases the very essentials of life itself—we cannot but believe that the number of our supporters would materially increase. We therefore ask those who know the society's work to canvass their colleagues who are not subscribers so that the field of support may be extended and the financial stability of the Fund increased."

Longer and Better Modern Life.

Dr. A. Trimble, chief tuberculosis officer, Belfast, in a recent address at Portrush, on some factors which have led to better health and the prolongation of life in the community, said that the improvement was best proved by a consideration of the general death rate. Taking Belfast as an index, the average death rate during the years 1890-94 was 25.9 per 1,000, while for the years 1920-24 it was 14.9 per 1,000, a reduction of 42 per cent. The death rate from tuberculosis in the same periods showed a reduction of 62 per cent. The reduction applied to practically all fatal diseases with the exception of cancer, which seemed to be slightly increasing, and of pneumonia, which was stationary. Calculating the general expectancy of life for the years mentioned, it would seem that thirty years ago at birth the expectation of life might be considered to be 33.6 years; at present it was 49.2, an addition to the average expectation of life of fifteen years. Dr. Trimble dealt with the ravages of plague, small-pox, and typhus some centuries ago, and said that the amount of time lost off work through disabling sickness was much shorter now than thirty years ago. When the causes of death in Belfast were analysed it was found that preventable infection and preventable infantile diseases had been accountable for at least 50 per cent. of the total deaths. In discussing the methods by which such avoidable waste of life might be prevented, Dr. Trimble emphasized the importance of cleanliness as a bulwark against infection, and of proper and adequate nourishment in enabling the body to resist disease. He advocated a reorganization of the educational system whereby greater facilities would be provided in elementary schools for personal cleanliness and for obtaining a knowledge of the facts which concern health and life.

And secondly, at a special meeting of the Senate on October 9th, 1924, a resolution containing the following words was passed unanimously:

"The Senate is of opinion that such changes in the organization of the University, as are necessary, may be more readily effected by amendments promoted by the University than by a statutory revision of the University as constituted by the Act of 1898."

I think I may therefore claim that my position, in which you regard me as being solitary, is the position of both the Senate and of Convocation, who by statute have the final claim to speak for the University as a corporate body.

The Universities of Oxford and Cambridge were left undisturbed for about a century prior to the recent Statutory Commissions which have reported upon them. The University of London within the last forty years has suffered no less than three Royal Commissions and two departmental committees. Is there any reason to suppose that the present departmental committee, with its reference indicating that its inquiry was to be based upon the Haldane report, has found finality of wisdom as compared with its predecessors, so recent in time, so much more impartially constituted, and without any restriction of reference to a gravely discredited report?

In conclusion, since you compare the three Universities—Oxford, Cambridge, and London—it may interest your readers to know that the relative number of graduates upon the parliamentary roll for these three Universities is: Oxford 11,339, London 11,997, Cambridge 16,621. London in this respect has thus already passed Oxford and is rapidly overtaking Cambridge. It will also probably interest your readers to know that, of the 376 Fellows of the Royal College of Physicians of London, who are elected for professional distinction from its members scattered all over the world, 149 are graduates of London University, 97 of Cambridge, and 51 of Oxford. These facts, I submit, do not seem to justify your criticism that the University has mismanaged its affairs while it has had control of them. In size and in prestige it has made the most astonishing progress, notwithstanding the continual turmoil engendered by these too frequent interferences with its constitution.—I am, etc.,

E. GRAHAM LITTLE.

House of Commons, June 25th.

THE ELECTRICAL TREATMENT OF TIC-DOULOUREUX.

SIR,—Dr. W. J. Turrell's communication on the electrical treatment of tic-douloureux (June 12th, p. 989) is a step forward to the understanding of a disease of still doubtful pathology, and it supplies a valuable therapeutic contribution.

His reference to the statement of a surgical colleague is perhaps a little severe. I remember the article well to which he refers, and my only criticism of it is that the Hartley-Krause operation is obsolete, as there are safer and simpler routes of approach to the ganglion and its immediate connexions. In my recent paper on the radical treatment of trigeminal neuralgia, published in your issue of May 8th and 15th, I omitted to state that I had employed the constant current in the treatment of the post-operative paraesthesias that arise. The result has been immediate, and I shall certainly employ it for subsequent cases.

Dr. Turrell's results will be gratifying to all readers, though a careful study of the reports of his cases does not convince me that the constant current alone is curative. If tic-douloureux is a sympathetic phenomenon, as I firmly believe, then the constant current is a most valuable palliative, as it is in arteriospasm elsewhere. But does it cure? I think the complete cure of tic, in the light of our present knowledge, is the combined task of the electrotherapist and surgeon. I have looked for some communication from the electrotherapist in connexion with the treatment of angina pectoris.

Electrotherapy as a remedial measure for those troublesome post-operative intestinal symptoms associated with pylorospasm of infants has yet to prove or disprove its value. These troublesome and difficult symptoms, considered by many to be infective, are, I am sure, vegetative in origin and are only part of a general vegetative unbalance.—I am, etc.,

BASIL HUGHES, D.S.O., F.R.C.S.

Bradford, June 14th.

RECOVERY AFTER MASSAGE OF THE HEART.

SIR,—In his article on recovery after massage of the heart in the BRITISH MEDICAL JOURNAL of April 24th, Mr. Girling Ball attributes his patient's recovery to massage of the heart, ignoring his own significant admission that 10 minims of adrenaline were injected into the heart muscle. It appears to me that the recovery may have been at least partially due to the latter procedure, as certain features of his case (very rapid pulse and extreme restlessness) so curiously resemble the case I relate below.

A Hindu boy of 15 was operated on by me at the Nasik Civil Hospital in June, 1924, for resection of a rib. The anaesthetic given was chloroform; early in the operation he stopped breathing. I immediately passed my left forefinger over the back of the tongue to ensure a clear airway, and at the same time a few motions of artificial respiration were carried out, but the boy remained pale and flaccid; he was then found to be pulseless and no heart sounds could be detected. Ten minims of adrenaline 1 in 1,000 were immediately injected into the apex of the heart through the fourth space, and artificial respiration continued. Within two minutes pulsation was visible in the neck, the heart beat became more and more rapid, and respiration returned. The operation was postponed, and the boy carried on a stretcher at once to the ward for restorative treatment. In a few minutes he had become acutely maniacal, shouting out and throwing himself about the bed. His pulse was counted several times in the neighbourhood of 190, and in spite of digitalin did not fall till next day, when he was very apologetic for being so noisy!

An operation was done later under cocaine, and he left the hospital "relieved" some weeks later.—I am, etc.,

W. C. SPACKMAN, M.B., B.S.Lond.,
Major, I.M.S.,
Civil Surgeon and Superintendent, Medical School, Ahmedabad, India.

May 19th.

OBSTETRICS IN GENERAL PRACTICE.

SIR,—The letter of Dr. James Cook in the BRITISH MEDICAL JOURNAL of June 26th (p. 1101) leads me to ask what Dr. Kerr has to say to the following extract from the 1925 report of the Coombe Lying-in Hospital, Dublin, as reported in your issue of June 19th (p. 1059).

"The morbidity rate was 4.5 per cent. (42 cases). . . . In 24 of these patients no vaginal examinations were made, there was no laceration of the perineum, and no operative intervention necessary."

And is it in midwifery only that "young and inexperienced men" muddle along?—I am, etc.,

J. C. L. DAY.

Rhyl, June 26th.

ATOPHAN DERIVATIVES IN RHEUMATISM: A CAUTION.

SIR,—On page 90 of the *Epitome* in your issue of May 29th the successful treatment of rheumatism and gout by injections of atophanyl is referred to. Certainly it is stated that not more than twenty injections should be given, but I should like to utter a caution on the subject of atophan derivatives. I have had personally two fatal cases of toxic jaundice following the use of atoquinol in rheumatoid arthritis, and I know of several others. The similarity between the symptoms in these cases and in those hepatic toxaemias produced by other ring compounds suggests that this is more than a coincidence. I hope that further data of these cases will be published later, but it has been suggested to me that I ought to call attention to the subject at once, so that we may be on our guard. It would be interesting to know if others have had similar unfortunate experiences.—I am, etc.,

W. LANGDON BROWN.

London, W., June 29th.

power is proportionate to the degree of tuberculin immunity obtained. This process of immunizing the system against tubercle is in principle not different from the prophylactic inoculations against other diseases, save that we are dealing with a much more powerful toxin, and more care is therefore necessary in giving it. Its very potency, however, better lends itself to stimulating the body cells to antibody formation and therefore to a more lasting endurance thereof. Indeed, in the present state of our knowledge, it is difficult to see what other method can or will be employed for this purpose, so like is it to Nature's own method.

In conclusion I am tempted to say something about tuberculin prophylaxis.

If tuberculin can help a patient to throw off the disease by the raising of his body resistance, why should it not be possible to raise adequately the resistance of anyone who has only the tuberculous diathesis before he is attacked? Indeed, it is sometimes difficult to tell where diathesis ends and the disease begins. I am of opinion that herein lies the greatest value of tuberculin, in that it will be found to prevent the onset of tuberculosis in the same way that immunizations are secured against other diseases. I have noticed how well sickly, pretuberculous children tolerate tuberculin and improve in health. Some years, however, will probably have to elapse before reliable conclusions can be drawn from these cases in saying how long this artificial immunity lasts.

I do not wish to give the impression that every case does well or that the tuberculin course is always smooth sailing. It is often full of difficulties and set-backs, according to the complicating circumstances of the patient's life, and the physician has to exercise the utmost care in overcoming these opposing forces. It must be confessed that in not a few cases he fails. Nevertheless, when it can be given, there is, in my opinion, nothing to equal it in value. It seems to make the body put up a better fight and to hold more stubbornly the front line against the advance of tuberculous disease than anything else.—I am, etc.,

County Offices, Dorchester, June 28th. H. C. MANNING.

THE SPAHLINGER TREATMENT.

SIR,—*Pace* Dr. Jenkins (BRITISH MEDICAL JOURNAL, June 26th, p. 1103), I have never suggested that the memorandum issued by the Science Committee professes to "favour" the Spahlinger "remedy." What it does "favour" is a *trial of the "remedy"* under approved conditions. The difference between the two positions is a wide one, though Dr. Jenkins does not seem to appreciate it.—I am, etc.,

London, W., June 29th. C. O. HAWTHORNE.

POST-ENCEPHALITIS LETHARGICA.

SIR,—With reference to the correspondence on our paper entitled "Hyoscine in post-encephalitis lethargica" we would like to point out that Dr. W. S. Dawson has interpreted our views correctly in assuming that we used the term "hysterical" as synonymous with "functional."

We note with interest that Dr. Dawson's experience of psychotherapy in these cases coincides with ours.—We are, etc.,

P. K. MCCOWAN,
J. S. HARRIS,
S. MANN.

West Park Mental Hospital, Epsom, Surrey, June 26th.

SIR,—Dr. Moll's advocacy in the JOURNAL of June 26th (p. 1079) of the treatment of post-encephalitic Parkinsonism by nicotine has interested me greatly, and because it is important I may perhaps be pardoned for drawing attention to some points in the action of the drug.

He ascribes the benefit obtained to depression of the sympathetic prespinal reflex arc subserving plastic tone. It has been shown by Langley that nicotine acts on the peripheral ganglion cells of the autonomic system and not on the preganglionic fibres, for the action may be obtained after these have degenerated. Further, the action is one of transitory stimulation followed by depression of these cells, and clear evidence of this stimulation may be obtained from the preliminary fall in pulse rate which Dr. Moll describes, a change which must be due to stimulation of the parasympathetic cardiac ganglia.

A rather more important action of nicotine is the pronounced stimulation of the medulla and spinal cord, adequate evidence of which action may be obtained from the case histories reported. Since the increase in plastic tone is in the nature of a "release phenomenon," this stimulation is worth some consideration. Lastly, may I amplify Dr. Moll's account by drawing attention to the fact that nicotine is a very poisonous substance, nearly as toxic as prussic acid, and therefore care is necessary in its use?—I am, etc.,

University of Edinburgh, June 28th. G. A. MASSON.

ASEPTIC RESECTION OF THE COLON.

SIR,—The report of the proceedings of the Subsection of Proctology of the Royal Society of Medicine (JOURNAL, June 19th, p. 1050) leads me to suggest that surgeons should try using the crushing clamp hot, instead of cold (or warm). Thus used subsequent haemorrhage is much less likely to occur. Straight from the ordinary boiling sterilizer is possibly hot enough, but I have tried making it still more so in a flame. This must not be overdone, though, or the tissues will splutter and splash through violent boiling of the moisture in them.

A clamp heated by boiling water may easily be too hot for the surgeon's hands, and so require to be held in a towel; and, of course, care must be taken not to touch the wrong tissues with it.—I am, etc.,

Doncaster, June 24th. W. REGINALD WILSON.

REORGANIZATION OF THE UNIVERSITY OF LONDON.

SIR,—It is obviously you who are angry, not I. You have strenuously supported the removal of the University to the Bedford site; I have strenuously opposed this scheme since its inception by the Haldane Commission in 1911, because of the conditions implied in their report; the scheme has now definitely and finally failed after fifteen years of conflict. I leave it to your readers to judge which of us two has reason to be complacent.

Indeed, you are so angry that you most unpardonably misrepresent the facts of the offer of the site. The site was not "a gift" at any time, but was offered in exchange for property, the greater part of which is in the possession of King's College; after anxious, and certainly prolonged, deliberation, King's College refused to give up its part of the property, so coveted by the Government, and could not be compelled to do so. The Senate consequently notified the Treasury in June, 1925, that the *exchange*, insisted upon by successive Chancellors of the Exchequer, could not be effected. But it also expressed its eagerness to receive the whole, or any part, of the Bloomsbury site, as a *gift* for University purposes. The Treasury took no notice of this intimation for several months; until, in fact, their option upon the Bedford land had expired, and the gift, asked for by the Senate, was no longer feasible. I leave it again to your readers to judge whether these facts support your statement that the gift (?) of the Bloomsbury site was contumeliously rejected by the University.

You seem to suggest that the only friends I have in opposing the appointment of a departmental committee and its renewed attempt to revolutionize the constitution of the University are the Duke of Bedford's trustees. Why these irrelevant and innocent persons should be dragged into the argument I do not understand—the departmental committee expressly avoided any recommendations concerning the site. You must be unaware of two facts which sufficiently refute your suggestion. First, a resolution was passed, without a dissentient voice, at a record meeting of Convocation held on October 14th, 1924, with 809 members present:

"That this House protests against the appointment of a departmental committee on matters connected with London University, and further against the omission of any representative of Convocation from its personnel."

with a view to ensuring the early detection of disease. More co-operation was required, and treatment to be complete must be a matter of team work. Professor William Wright, dean of the College, in presenting the annual report, said that during the year 588 students had been in attendance, 103 had taken medical or dental degrees or diplomas, and 39 had obtained post-graduate degrees or diplomas. He referred to the anonymous gift of £50,000 received during the year, which had been applied to the endowment of the Freedom Research Fund, the whole of the income being devoted to medical research. Lord Knutsford, proposing a vote of thanks to the Minister of Health, pleaded for greater support for the London Hospital, which would enable it to carry on more extensive research work. Lord Dawson, seconding the vote of thanks, said that it seemed to be inevitable that a large development in industrial medicine would come; employers would find it necessary to increase medical services for their employees in the interests of both parties, and the proportion of private medical work would diminish. There would also be an increase of clinics and hospitals in the future.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

Sir John Ferguson, president of the Institute of Bankers, distributed, on June 25th, the prizes and certificates won by students at the London School of Medicine for Women, and addressed the students on the importance of the medical work to be undertaken by women. Lady Barrett, the dean of the school, who presided, gave a report of the very successful year that had passed, and anticipated even better results in the future. Out of twenty-five distinctions awarded by the University of London during the last twelve months, no fewer than eight had been won by students of the school.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

M.D.—R. Mansoor, J. H. Saint (awarded gold medal), Margaret Scoresby-Jackson, E. A. Welsh, T. H. Blench, C. R. Smith.
M.D. (*for practitioners of fifteen years' standing*).—V. P. Norman.
M.B., B.S.—*S. McD. Selby, *H. Rosenbloom, *G. Y. Feggetter, W. B. Allan, R. Y. Carter, M. Coll, A. D. W. Cooke, Dorothy E. Crisp, Mabel Dodds, Jessie S. Dunlop, F. P. Forrest, W. L. Fulthorpe, H. Gass, H. D. Golder, R. A. Goodall, C. V. Harrison, Dorothy Hopkinson, J. H. Horsley, Grace C. Howie, D. S. Jackson, E. E. Kendall, K. A. W. Law, J. A. Livingston, G. M. Macintyre, F. McGuckin, G. P. McNabb, Grace E. McVitie, A. D. Miller, H. Moross, M. A. Phillips, Mabel Popham, R. H. Robinson, Phyllis Routledge, F. G. Sinclair, R. C. F. Smith, M. M. Suzman, Charlotte M. Thomson.
The Philipson Scholarships have been awarded to S. McD. Selby and H. Rosenbloom.
B.HY. AND D.P.H.—Madge Hopper and G. Wilson.

* With second-class honours.

UNIVERSITY OF WALES.

THE following students of the Welsh National School of Medicine have been approved at the examination indicated:

M.B., B.CH.—D. J. Davies, T. E. Davies, Marjorie M. Duggan, Dilys Jones, D. R. Owen, H. G. St.M. Rees.

UNIVERSITY OF GLASGOW.

THE following medical degrees were conferred on June 23rd:

M.D.—*J. K. Rennie, *G. M. Wishart, †W. P. Grieve, W. K. Anderson, J. S. Bizett, D. Robertson.
PH.D. IN THE FACULTY OF MEDICINE.—A. M'Leod Watson.

* With honours. † With commendation.

UNIVERSITY OF DUBLIN.

AT a special meeting of the Senate of Trinity College held on June 29th the honorary degree of Master in Surgery was conferred on Sir Berkeley Moynihan, Bt., LL.D., F.R.C.S.

UNIVERSITY OF CAPETOWN.

AT the graduation ceremony on July 3rd, 1925, the following were admitted to the degrees of M.B., Ch.B.:

G. F. Brown, G. H. G. du Toit, D. Epstein (with honours), Janet E. Masterton, B.A., J. S. Palm, S. Poyser, Elizabeth M. Reitz, J. D. K. Reitz, T. Richter, J. Smyth, R. E. Stevenson, R. V. S. Stevenson, J. H. Symington, D. R. Truter, F. D. J. Viljoen.

At the graduation ceremony on December 15th, 1925, the degree of M.B., Ch.B. was conferred on the following:

B. W. F. Bishop, F. A. Donnolly, G. F. Eagle, P. C. Eagle, H. P. Forster, J. A. P. J. Kritzinger, M. W. Mills, M. E. Pimstone, B.A., M. K. Tucker, G. F. van der Merwe, F. D. du T. van Zyl, D. H. R. Vollet, B. W. Watts, C. Weinberg.

At both ceremonies the degrees were conferred by the Vice-Chancellor, Principal Sir J. Carruthers Beattie, Kt., D.Sc.

The roll of medical students for 1926 shows the following numbers in each academic year; the number in parentheses indicates the corresponding total during the half-year ended December 31st, 1925:

First year ...	...	69	(54)	Fourth year...	...	27	(24)
Second year ...	...	63	(34)	Fifth year ...	...	24	(26)
Third year ...	...	46	(42)	Sixth year ...	...	29	(20)
Total ...	...	...	...	...	...	258	(200)

ROYAL COLLEGE OF SURGEONS IN IRELAND.

ON his retirement from the Presidency of the Royal College of Surgeons in Ireland, Mr. Robert C. B. Maunsell has been presented with a salver by the members of the Council as a mark of their appreciation of the admirable manner with which he carried out the important duties of his office during the years 1924–26.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—A. M. El-Mishad, W. E. Ivers, L. Schapera, A. D. Shubsachs, C. H. Spencer.
MEDICINE.—E. A. Stroud.
FORENSIC MEDICINE.—R. V. Cookes, J. E. Howard, D. Jacobson, R. Lamort, T. C. Pain, J. Pattis, L. Schapera, E. A. Stroud.
MIDWIFERY.—S. B. Browning, W. O. R. Fischer, J. H. Gillatt, M. N. Nicolson, M. Pettigrew, M. Stinnesbeck.

The diploma of the Society has been granted to Messrs. R. V. Cookes, W. O. R. Fischer, J. E. Howard, R. Lamort, A. M. El-Mishad, M. N. Nicolson, M. Pettigrew, and A. D. Shubsachs.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

IN the House of Commons this week the chief business has been the Coal Mines Bill, permitting for a period of five years an extension of the working day in coal-mines to eight hours. The Parliamentary Medical Committee met on June 30th to hear Mr. Wilfred Buckley, President of the National Clean Milk Society, and also two inspectors of the Ministry of Health, on the regulations about the use of preservatives and food-stuffs. These regulations come into force next January.

The report of the Select Committee on nursing homes has been drafted, and will be considered by the Committee on July 6th. Its issue is expected within a week thereafter.

Smoke Abatement Bill.

As briefly announced last week, the Smoke Abatement Bill, which has already passed through the House of Lords, was read a second time in the House of Commons, on the motion of the Minister of Health, on June 22nd. It had been formally read a second time in the House of Commons, but there seems to have been some irregularity and the vote was rescinded so that the Minister might explain the aims and objects of the bill. In so doing, Mr. Neville Chamberlain began by recalling that in 1920 a departmental committee had been appointed under the chairmanship of Lord Newton to advise what measures could be taken to mitigate the emission of smoke and other noxious vapours. The committee reported in 1921, and since then four bills had been introduced; that now before the House was more or less founded on its recommendations. Public opinion had progressed steadily during the past few years in the direction of demanding cleaner air. While this might be due to some extent to the introduction of the bills, it was still more the result of advances in medical knowledge and the recognition of the vitalizing effects of sunlight. Even now, he doubted whether those who habitually lived in towns fully realized the extent to which they were deprived of those essential factors. It was estimated that the people who lived in the country got 20 per cent. more sunlight than those who resided in towns. The emission of smoke must necessarily mean a waste of fuel. The Newton Committee declared that about 2,500,000 tons of soot escaped into the atmosphere every year in this country from domestic fireplaces, and another 500,000 tons from industrial works. That represented a very substantial sum. An inquiry made in Manchester in 1918 comparing the cost of washing in that town with the cost in Harrogate showed that the inhabitants of Manchester, in order to keep clean, had each to spend 7½d. more every week than the inhabitants of Harrogate. It was estimated that Manchester spent something like £300,000 more in washing in order to keep as clean as Harrogate. Apart from the damage done by smoke to vegetation and crops, it was only necessary to look round the Houses of Parliament buildings to see the effect of acid soot when it was deposited on even the most durable kinds of stone. The pollution of the atmosphere by smoke was at once costly, wasteful, and highly injurious to human health. When, however, they came to consider in what way the law should be amended in order to diminish this evil, differences of opinion began to arise, and this bill had not escaped criticism. Those who might be called smoke consumers thought that it was not sufficiently drastic and would do little to improve matters, while the smoke producers expressed the view that its provisions were so drastic as to be likely to cause serious injury to at any rate some of the industries of the country. He hoped that the bill was striking a happy medium, while he realized that at this moment, above all others, nothing should be done to add fresh obstacles to British industry. But he believed that a great deal could be done to prevent the emission of noxious vapours without doing any injury to industry. If he had not entirely succeeded in carrying out his intentions he would only be too happy to hear in Committee any representations which might be made. Mr. Chamberlain described the provisions of Clause 1 of the bill, which amended the provisions of the Public Health Act, 1875, relating to smoke nuisances, so as to include other kinds of smoke besides black smoke, and extended the definition of the

Universities and Colleges.

UNIVERSITY OF OXFORD

Honorary Degrees.

AT the Encaenia on June 23rd, presided over by the Chancellor of the University (Viscount Cave), a number of distinguished persons were presented for honorary degrees in the Sheldonian Theatre. Two of the recipients were medical men. The degree of D.C.L. was conferred on Lord Dawson of Penn, G.C.V.O., M.D., physician to the London Hospital; and that of D.Sc. upon Sir Walter Morley Fletcher, M.D., F.R.S., secretary of the Medical Research Council. According to custom each of the honorary doctors was presented to the Chancellor by the Public Orator, Mr. A. B. Poynton, M.A., Fellow of University College. The Latin text of the speeches with which Lord Dawson and Sir Walter Fletcher were introduced is printed below, and we are much indebted to the Public Orator for the English translations appended.

Lord Dawson of Penn.

Adest vir artis medicae peritus, et quidem Regis ipsius e medicis, qui inter Londinienses per totam vitam et clinica diligenter exercenda et morbis hominum investigandis, priscae Menenii sapientiae haud immemor, insignem laudem meruit. Idem ut in Gallia militum valetudinariis a belli principio impigre operam navavit, ita docendo, scribendo, praelegendo etiamnunc artis medicae studia illustrat. Nuper inter proceres adlectus unus ex Asclepiadis Eupatridarum consiliis interest. Nos academici haud ignari sumus quantum referat malorum principiis obstare. Senatore tam prudenti, moderato, erudito confisi speramus fore ut progenies nostra, legum auxilio corroborata, ex tertio gradu pumilonum ad summum gradum Milonum evadat. Praesento vobis virum honoratissimum qui publicae sanitati sanam doctrinam adhibet, Bertrand, Baronem Dawson de Penn, illustrissimorum ordinum Balnei et SS. Michaelis et Georgii Equitem Commendatorem, necnon illustrissimi ordinis Victoriani Magnae Crucis Equitem Commendatorem, ut admittatur ad gradum Doctoris in jure civili honoris causa.

[This is an eminent Physician, indeed one of the King's Physicians, who, not forgetful of the wisdom of old Menenius,[1] by a life spent in London in the diligent practice of clinic and the investigation of human disease, has won distinguished honour. From the beginning of the War he rendered active help to the military hospitals in France, and even to this day he continues to add distinction to medical studies by teaching, writing, and lecturing. He has lately been called to the House of Lords, and is the only member of the guild of Aesculapius among the Peers. We, members of the University, know well how important it is to stop mischief at the beginning. We trust that by the help of a senator so wise, tactful, and learned, the population of our country, with a tonic of sound laws, may rise from the third grade of pygmies to the highest grade of athletes.[2] I present to you one who applies sound learning to national health, the Right Honourable, Bertrand, Baron Dawson of Penn, K.C.B., K.C.M.G., G.C.V.O., that he may be admitted to the honorary degree of Doctor in Civil Law.]

Sir Walter Fletcher.

Sequitur tertius Cantabrigiensis, rerum naturae indagator, qui periclitationibus accuratissime factis exposuit quas vices in animantium corpore elementa mutent, cum musculi conducuntur, languent, alimentis recreantur. Cum juvenis olim et pedum pernicitate et mentis viribus insignis fuisset, multas et insignes partes in Academia et Collegio omnium magnificentissimo peregit, procurator, praelector, morum studiorumque moderator. Tum, cum ad summam dignitatem in Biochemia profitenda pervenire potuisset, ultro se patriae ad munus gravissimum suscipiendum obtulit. Exquisitiora artis medicae studia propagantibus accessit hortator animosus, administrator prudentissimus. Nec tenues rivos ex immensis illis pecuniis quas viri magni ad levandos aegros legarunt, ad nos Oxonienses deduxit. Si monumentum benevolentiae quaeritis qua sororculam suam, Academiam nostram prosequitur, ad Parcum via patet; jamque regiae moli architectus supremam manum imponit. Itaque praesento vobis virum animi magnitudine et abstinentia insignem Walterum Morley Fletcher, illustrissimi ordinis Imperii Britannici Equitem, Regiae Societati adscriptum, Collegii Sanctae et Individuae Trinitatis inter Cantabrigienses socium, ut admittatur ad gradum Doctoris in scientia honoris causa.

[Here follows a third son of Cambridge, a researcher in Natural Science, who by most careful experiments discovered and expounded the chemical changes which take place when the muscles are contracted, grow weary, and are revived by nourishment. As an undergraduate he was remarkable not less for speed of foot than for force of mind, and he played many parts with distinction, both in the University and in his own most magnificent College, as Proctor, Lecturer, and Senior Tutor. Then, when he would certainly have risen to the highest honours in Biochemistry, as Professor, he offered his services to the country in a most responsible position. He became Secretary of the Council of Medical Research, and was both a spirited adviser and a wise administrator. By no means slender are the streams which he has diverted to Oxford from those splendid funds which great men have bequeathed for the relief of human suffering. If you seek for evidence of his kind feeling towards his little sister of Oxford, the way to the Park lies open, and the architect is just putting his finishing touch to the kingly edifice. And so I present to you one who is eminent, both for the grandeur of his conception and his self-sacrifice, Sir Walter Morley Fletcher, K.B.E., F.R.S., Fellow of Trinity College, Cambridge, that he may be admitted to the honorary degree of Doctor in Science.]

Both Lord Dawson and Sir Walter Fletcher were also among the distinguished guests at the Gaudy held the same evening at Christ Church.

The Welsh Memorial prize for the study of human anatomy, and in particular of the art of drawing in relation thereto, has been awarded to R. E. Adam, scholar of University College. The work of J. C. L. Green, B.A., Balliol College, is highly commended.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on June 26th the following medical degrees were conferred:

M.D.—F. B. Smith.
M.CHIR.—T. M. Thomas.
M.B., B.CHIR.—N. T. Glynn, C. C. Halliwell, K. Fletcher-Barrett.
B.CHIR.—A. C. Copley, J. B. Ellison, F. W. Roques.

At a congregation held on June 29th the following medical degrees were conferred:

M.D.—F. A. Phillipps, F. H. Young, C. H. Whittle, *J. M. Smith.
M.B., B.CHIR.—L. P. Marshall.
B.CHIR.—F. A. Phillipps, H. M. Woodman, J. A. S. Brown, H. B. Trumper.

* Admitted by proxy.

UNIVERSITY OF LONDON.

Appointments and Resignations.

SIR WILLIAM BEVERIDGE, K.C.B., M.A., LL.D., B.C.L., Director of the London School of Economics, has been elected Vice-Chancellor for 1926–27, in succession to Professor E. A. Gardner, Litt.D. A cordial vote of thanks was passed to Professor Gardner for his services during his term of office.

The appointment of Dr. Major Greenwood to the University Chair of Epidemiology and Vital Statistics, tenable at the London School of Hygiene and Tropical Medicine, has been formally confirmed by the Senate. The foundation stone of the new home of the school will be laid by the Minister of Health at 3.30 p.m. on Wednesday next, July 7th, and though the school is in being it is not expected that the new building will be ready until the year after next. It is for this reason, presumably, that Dr. Major Greenwood has been appointed professor as from August 1st, 1928. While a member of the staff of the Lister Institute of Preventive Medicine Dr. Greenwood was appointed (January, 1915) Reader in Medical Statistics. In October, 1920, he was appointed a medical officer to the Ministry of Health, and accepted a part-time honorary post at University College, his title of Reader being continued.

Professor W. W. C. Topley, M.B., B.Chir.Cantab., has been appointed to the University Chair of Bacteriology and Immunology at the London School of Hygiene and Tropical Medicine. He was Director of the Institute of Pathology at Charing Cross Hospital from 1911 to 1922, when he was appointed Professor of Bacteriology in the University of Manchester and Director of the Public Health Laboratories.

Mr. P. A. Buxton, M.A.Camb., L.R.C.P., M.R.C.S., has been appointed as from August 1st to the University Readership in Medical Entomology, tenable at the London School of Hygiene and Tropical Medicine. He graduated B.A.Camb. in 1914 (First Class, Natural Sciences Tripos, Parts I and II), and was a Fellow of Trinity College from 1916–21. From 1917–19 he was entomologist to the Mesopotamian Force, and from 1920–21 demonstrator in the zoology department at Cambridge. From 1921–24 he was medical entomologist to the Palestine Government and from 1924–25 leader of the expedition from the School of Tropical Medicine to the South Pacific. Since March, 1926, he has been Director of the department of medical entomology at the London School of Hygiene and Tropical Medicine.

The title of Reader in Pharmacognosy in the University has been conferred on Mr. T. E. Wallis, B.Sc.Lond., F.I.C., in respect of the post of lecturer in botany held by him at the School of Pharmacy of the Pharmaceutical Society of Great Britain since 1920.

The resignations of Professor A. J. Clark from the University Chair of Pharmacology, tenable at University College, on appointment to the Chair of Materia Medica in the University of Edinburgh, and Dr. G. V. Anrep from the University Readership in Physiology, tenable at the same college, on appointment to a Lectureship in Physiology in the University of Cambridge, were accepted as from July 31st.

Dunn Exhibition in Physiology.

The Dunn Exhibition in Physiology was awarded to Mr. C. G. Paine, an internal student, of St. Mary's Hospital Medical School, in the place of Mr. D. F. Ogborn, who was originally awarded the exhibition and has since been drowned in a boating accident while saving the life of another.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

On June 28th the Minister of Health distributed the prizes to students of the London Hospital Medical College and Dental School, and gave an address on the organization of medical services; he made especial reference to the importance of continual research

[1] Author of the famous parable about the belly and the members: cf. Livy, ii, 32, §§ 8-12.
[2] Milo of Croton: cf. Cicero, *de Senectute*, § 27.

The Services.

MEDICAL BRANCHES OF THE SERVICES.

IMPROVED TERMS AND CONDITIONS.

As a result of the recommendations of the Interdepartmental Committee on the Medical Branches of the Fighting Services, before whom the British Medical Association gave evidence early this year,[1] substantial increases in the rates of pay and retiring gratuities, and improved conditions of promotion and retirement for officers of the Royal Army Medical Corps, Army Dental Corps, and the Royal Army Veterinary Corps, are embodied in a Royal Warrant issued by the War Office on June 29th (A.O. 196, 1926). A further Army Order revises the scales of pay and retired pay for the Army Nursing Services. Simultaneously the Air Ministry has announced improvements in the conditions of service and emoluments of medical officers of the Royal Air Force, and of members of the R.A.F. Nursing Service. The Admiralty also is issuing this week an Admiralty Fleet Order prescribing improved terms and conditions of service for medical officers R.N., dental officers R.N., and members of Queen Alexandra's Royal Naval Nursing Service. We understand that revised terms and conditions of service for officers of the Indian Medical Service are likely to be issued shortly.

The changes, generally, will take effect from July 1st, 1926, or (in the case of naval officers) "as soon afterwards as the necessary arrangements can be made." They were foreshadowed by the Prime Minister in his statement in the House of Commons on June 15th (reported in our issue of June 19th, 1926, p. 1068), that the Government had considered the report of the committee appointed last autumn to consider questions relating to pay and other matters affecting recruitment of medical officers and nurses in the medical branches of the fighting services, and had decided to give effect to the committee's recommendations as from the first day of this month.

ROYAL ARMY MEDICAL CORPS.

The following table, extracted from the Army Order, contains the old and the new rates of pay for officers of the R.A.M.C. The revised rates are identical with those recommended by the British Medical Association in its Memorandum of Evidence.

RATES OF PAY.

Old Rates.	£ s. d.	*New Rates.*	£ s. d.
Lieutenant	1 2 0	Lieutenant	1 2 0
Captain	1 7 0	Captain	1 7 0
Captain, after 6 years' commissioned service ...	1 8 0	Captain, after 8 years' commissioned service ...	1 10 0
Captain, after 10 years' commissioned service ...	1 11 0	Captain, after 10 years' commissioned service ...	1 12 6
Major	1 15 0	Major	1 17 6
Major, after 15 years' commissioned service	2 0 0	Major, after 15 years' commissioned service ...	2 2 6
		Major after 18 years' commissioned service	2 5 0
		Major, after 20 years' commissioned service	2 10 0
Lieutenant-Colonel	2 10 0	Lieutenant-Colonel	2 17 6
Lieutenant-Colonel, after 20 years' commissioned service	2 12 6	Lieutenant-Colonel after 3 years' service as such ...	3 2 6
Lieutenant-Colonel, after 25 years' commissioned service	2 15 0		
Colonel	3 5 0	Colonel	3 10 0
Major-General	4 15 0	Major-General	4 15 0
Director-General	£2,500 a year	Director-General ... ... (*plus* lieutenant-general's allowances)	6 0 0

Additional Pay.

An officer of the R.A.M.C., employed at the War Office as Assistant Director-General, Assistant Director, or Deputy Assistant Director-General, will receive additional pay at 5s. a day instead of 2s. 9d. as at present.

Time in Civil Hospital Appointments.

An officer of the R.A.M.C. commissioned after holding a resident appointment of not less than one year in a civil hospital may be granted an antedate not exceeding one year in respect of the period spent in such an appointment provided that the interval between the termination of the hospital appointment and the date of entry into the service shall not ordinarily exceed six months. The antedate will count as commissioned service for the purpose of increments of pay, promotion, retirement, retired pay, and retiring gratuities.

Retiring Allowances.

An officer of the R.A.M.C. will be eligible to retire with a gratuity of £1,000 after seven years' service instead of after eight and a half years'. An officer of the R.A.M.C. who, after three years' service as a major is eligible to retire with a gratuity of £1,800, or after six years' service as a major with a gratuity of £2,500, will be eligible to retire with £2,800 in lieu of £1,800 and £3,500 in lieu of £2,500. An officer serving as a medical officer in the R.A.M.C. on September 13th, 1919, will be eligible on retirement as a major after twenty years' service for retired pay at a daily rate of £1 if more favourable to him than the rate assessed under the ordinary scale for medical officers. An officer who has retired as a major since September 13th, 1919, after completing twenty years' service shall be entitled to benefit under this provision with effect from the date of retirement.

In any case in which transfer from the rates of pay hitherto in force to the new rates involves a loss of emoluments, the officers may continue in receipt of the rates of pay hitherto in force until such time as, on account of increment or promotion, the new rates are equal to or exceed the old rates.

The revised rates of pay and additional pay (but not charge pay) sanctioned in this Warrant will be subject as from July 1st, 1926, to the deduction of 5½ per cent. which was made to the old rates as from July 1st, 1924, and will further be subject to revision in respect of subsequent variation in the cost of living, in the same manner and to the same extent as the rates introduced from July 1st, 1919.

MEDICAL OFFICERS R.N.

The following are the revised terms and conditions for naval medical officers announced by the Admiralty.

Increase in Establishment of Surgeon Captains.—The maximum number of surgeon captains authorized to be borne will be increased from sixteen to twenty. Two surgeon captains will be appointed to the R.N. Hospital, Haslar, as Professors of Medicine and Surgery respectively, on instructional duties connected with the general courses described below. The appointment of Director of Medical Studies, Naval Medical School, R.N. College, Greenwich, will in future be held by a surgeon captain, and a surgeon captain will be appointed to the R.N. Hospital, Malta, as second in charge.

Specialists' Allowances and Appointments.—The number of specialist appointments will be increased from forty-six to sixty, and the new appointments will include specialist posts in Medicine, Surgery, Radiology, and Hygiene. The allowance payable to holders of specialist appointments will be increased from 2s. 6d. to 5s. a day, as from July 1st, 1926.

Charge Pay.—The grant of charge pay will be made as from July 1st, 1926, on the following scale for medical officers in charge of hospitals and sick quarters: Surgeon rear-admirals and surgeon captains 10s. a day; surgeon commanders 5s. a day.

Professional Courses.

(*a*) *General Courses.*—Every officer below the rank of surgeon captain, except when he has just vacated an appointment at a home hospital or is due to take his promotion course, will be appointed, if his services can be spared, once in every four years to the R.N. Hospital, Haslar, for a course of instruction of not less than four months' duration in clinical medicine and surgery and allied subjects. At the end of the course, instead of being placed on unemployed time, the officer will be appointed for duty at one of the R.N. Hospitals at Haslar, Chatham, or Plymouth, unless or until he receives an appointment elsewhere.

(*b*) *Specialist Courses.*—Every officer selected to hold a specialist appointment will, provided his services can be spared, undergo a course of not less than six months' duration in his special subject at a civil hospital in London or other teaching centre, and will subsequently undergo a course of three months' duraton in that subject every four years while he is employed as a specialist.

(*c*) *Senior Medical Officers' Courses.*—The existing senior medical officers' courses will to a large extent be superseded by the general and specialist courses described above, and their number will, therefore, be capable of reduction without detriment to the professional opportunities in the service, but the reduction will not be made until the new courses have been in operation for some years.

The institution of general and specialist courses will necessitate an increase in establishment, and they cannot therefore be put into full operation until this increase has taken place, but the new arrangements will be inaugurated as soon as possible.

Time in Civil Hospital Appointments.

In the case of officers entering the naval service on or after July 1st, 1926, the following rules for counting time in hospital appointments will apply:

An officer who enters the Service on or after July 1st, 1926, and who has held, for a period of not less than one year before the date of his entry into the Service, a resident appointment as medical or surgical officer in a civil hospital after becoming a qualified medical practitioner, to be eligible, at the discretion of the Admiralty, to have his seniority antedated by not more than one year, provided that the appointment is one recognized by the Admiralty for this purpose, but this concession will not ordinarily be granted where the interval between the termination of the hospital appointment and the date of entry into the service exceeds six months. The period of not less than one year in a "resident" appointment may, at the discretion of the Admiralty, include a period of not more than six months spent in a "non-resident" appointment recognized by the Admiralty.

[1] The Memorandum of Evidence submitted by the Association was printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of January 30th, 1926, pp. 34-36.

word "smoke" to include "soot, ash, grit, and gritty particles." The clause increased the penalties for the commission of offences so that it would be a serious matter for manufacturers to break the law. It was proposed to allow temporary exemption to certain processes which could not at present be carried on satisfactorily in this country without the emission of smoke. Though private dwellings were the greatest sinners, he did not think it wise to include them, since in the present stage of knowledge it would be too great an interference with private liberty. The solution of the smoke difficulty lay in two directions. One was to make it as easy and cheap as possible for people to use gas and electricity. The other was in the production of smokeless fuel. A section of the Department of Scientific and Industrial Research had for some years been investigating fuel and making tests for private individuals. Although the problem had not yet been solved, progress had certainly been made. If, in the course of a year or so, a smokeless fuel was obtained which could be used in the open grate and which was sufficiently cheap and practicable to commend itself to the ordinary man and woman, it might be possible to amend this bill and to allow local authorities to exercise control over the burning of raw coal in grates. Until that time came, however, it would be best to leave the matter where it stood.

Dr. Salter said that he gave a general support to the bill, but with no great enthusiasm. He was concerned at the numerous loopholes and opportunities for evasion. Any amendments accepted by the Minister of Health in Committee ought to strengthen and not weaken the bill. The two greatest scourges of working-class life to-day were chronic rheumatism and chronic bronchitis. These two groups of diseases caused a greater loss of working time than almost all the others put together. Tuberculosis was receding fast into the background as one of the great disabling influences in working-class life. The discovery that most forms of chronic rheumatism took their origin in dental sepsis had led to a great deal of dental attention being given under the National Health Insurance Act and in other ways for the prevention of chronic rheumatism, but practically nothing was being done for the prevention of chronic bronchitis. The figures of the Ministry of Health showed that these two groups of diseases were getting worse every year. Chronic bronchitis had been clearly traced to soot and dirt in the atmosphere, and he welcomed the bill in so far as it would mitigate these diseases.

Dr. Fremantle said that the Ministry of Health appeared to have the impression, which was growing outside as well, that fireplaces should be abolished. Personally, he did not agree. The open fireplace was superior to closed heating systems which prevailed in America and other places abroad, because it provided ventilation. It was also adaptable to the needs of the individual. He hoped that it would be possible to insert in the bill later on some provision giving local authorities power to see that grates in new houses were of a kind which conserved heat and consumed smoke.

The bill was read a second time.

Bills.

The Rag Flock Act (1911) Amendment Bill was read a second time in the House of Commons on June 23rd.

In the House of Commons, on June 28th, Mr. A. V. Alexander introduced a bill to amend the Dentists Act, 1921, and it was read a first time.

International Information as to Tropical Diseases.—On June 28th Mr. Amery said the Bureau of Hygiene and Tropical Diseases, the Imperial Bureau of Entomology, and the Imperial Bureau of Mycology constantly received from all parts of the empire and foreign territories information on the problems of tropical disease affecting man, animal, and plant. This information was summarized in the periodical reviews, published by these bureaux, and distributed to subscribers, including the Governments of the oversea dependencies. In research on human tropical disease valuable work was done by the health organization of the League of Nations, through which knowledge of the progress made in that direction was widely distributed between the different Governments represented in the League.

Women Nurses for Male Insane Persons.—On June 28th Mr. C. Edwards asked the Minister of Health whether he was aware that at the Hellingly Asylum the East Sussex County Council employed female nurses in attendance on insane male patients; and whether, in view of the moral and physical dangers thus involved, he would take steps to prevent this practice. Mr. Chamberlain said female nurses were so employed. He was unable to accept the assumption upon which the second part of the question was based. Medical superintendents who had had experience of the practice of nursing male patients by women nurses were practically unanimous in thinking that this was desirable in certain types of cases, and that no risk to the nurses arose. He did not, therefore, propose to take any action.

Foot-and-Mouth Disease.—In a reply, on June 16th, to Mr. W. Thorne, Mr. Guinness (Minister of Agriculture) said that in the instances of foot-and-mouth disease in imported carcasses of pigs which brought about the Order prohibiting the import of fresh meat from the Continent, lesions of foot-and-mouth disease were only found in carcasses which had not been scraped or scalded. Scraping and scalding might make the discovery of the lesions difficult, but the carcass would be capable of introducing the disease to this country. The Ministry of Agriculture had no evidence that Chinese pork was capable of disseminating foot-and-mouth disease in this country. Chinese pigs were imported in calico cloths which, under the Packing Materials Order of 1925, must be thoroughly sterilized before further use. The certificate of the United States Government accompanying "box" loins of pork imported into this country provided all the necessary guarantees for safeguarding the public health. Answering Mr. Kennedy on June 17th, Mr. Guinness said that the Ministry of Agriculture inspected all imports of frozen meat, but not from the point of view of foot-and-mouth disease. There was no evidence that that disease could be conveyed in frozen meat. The danger was chiefly in the blood. They were taking steps with the Argentine Government to see that proper precautions were observed to prevent the slaughter and export of animals suffering from foot-and-mouth disease.

Anthrax and Shaving-brushes.—Mr. Chamberlain stated, on June 24th, that one case of anthrax caused by an infected shaving-brush had occurred this year. It was not fatal. Steps had been taken to deal with any future consignments of shaving-brushes from this source, and the matter had been referred to the Government of the country of origin for appropriate action.

Puerperal Septicaemia.—In reply to questions, Sir Kingsley Wood stated, on June 29th, that the report made by one of the medical officers of the Ministry of Health on the Kingston Nursing Association's home, where eight deaths from puerperal septicaemia had occurred during the last six months, showed that there had been grave laxity in administration and in the district midwifery practice associated with the home. He intended to address a communication to the Nursing Association and send copies to the County Council and the Kingston Town Council. In reply to Dr. Fremantle, who asked whether steps would be taken to ensure the speedy passage of the Midwives and Maternity Homes Bill, Sir Kingsley Wood asked for notice.

Disinfectants on Merchant Vessels.—The President of the Board of Trade has stated that disinfectants approved for use on board merchant vessels were submitted for approval and were tested chemically by the Government laboratory and bacteriologically by the Lister Institute. If they did not come up to the required standards they were not approved. The list of approved disinfectants was continually under revision, the officers concerned having been instructed to take samples from time to time. Where a sample was found not to conform to the required standard the name of the disinfectant was removed from the approved list. He would, however, have the list examined as suggested by Mr. Cluse.

Venereal Disease in the Army.—The Secretary of State for War has stated that during the last three years for which complete statistics were available the incidence of venereal disease in the army had decreased from 74 per 1,000 of the strength in 1921 to 47.8 per 1,000 in 1924. His medical advisers considered that this reduction was mainly due to the very effective preventive measures that had been and were still being employed.

Insurance Funds.—Mr. Chamberlain, in a reply to Sir Grattan Doyle, on June 24th, gave the following particulars concerning National Health Insurance in England and Wales: Total accumulated funds at December 31st, 1925, £113,000,000. Total payments made during the year ended December 31st, 1925: By insured persons, £11,970,000; by employers, £12,800,000; by the State, £7,220,000. Number of insured persons: Male, 9,395,000; female, 4,550,000. Total benefits paid during the year ended December 31st, 1925: For sickness benefit, £9,335,000; for disablement benefit, £4,514,000; for maternity benefit, £1,489,000; for medical benefit, £8,449,000; for additional benefits not included above, £761,000.

Artificial Light Treatment.—On June 28th Sir K. Wood told Captain Fraser that, according to the information in the possession of the Ministry of Health, provision had been made for artificial light treatment at, or in connexion with, maternity and child welfare centres in the following metropolitan boroughs: Bethnal Green, Islington, St. Pancras, Deptford, Kensington, Shoreditch, Greenwich, Poplar, Southwark, Hackney, St. Marylebone, Stepney, Westminster. Where the prior approval of the Ministry was obtained to the arrangements, and a contribution was desired, the usual grant of 50 per cent. was being paid towards the net cost of the installation and of the first year's running expenses.

Driving Licences.—Colonel Ashley, on June 24th, told Sir Gerald Strickland that the general question of the issue of driving licences to persons suffering from physical disabilities was under his consideration in connexion with the promised bill for the better regulation of road vehicles. Commander Kenworthy asked whether the Minister was aware that deaf men were extremely intelligent and had excellent sight. Colonel Ashley said that as he was slightly deaf himself he subscribed to this statement.

Notes in Brief.

The report of the Chief Inspector of Factories for 1925 cannot be issued before the end of this month.

The Minister of Health is advised that local authorities already have power under the Public Health Acts to deal with ponds, ditches, and other places where nuisance arises through the breeding of mosquitos. On the information at present available he doubts whether further legislation is required.

On March 31st last 13,663 blind persons in England and Wales between 50 and 70 were in receipt of old age pensions, under Section 1 of the Blind Persons Act, 1920. About 8,880 blind persons over 70 were in receipt of old age pensions under the Old Age Pensions Acts.

The Home Secretary hopes to introduce the bill to amend the Factory Acts this month.

From January to May, 1926, 734,132 cwt. of condensed skimmed milk were imported into the United Kingdom. The Minister of Agriculture is advised that the temperatures to which this milk was subjected at the factories did not suffice to destroy the virus of foot-and-mouth disease and the tubercle bacillus.

the creation of this post for a period of three years in the first instance, with a salary at the rate of £1,500 per annum, and I have appointed Dr. A. T. Stanton, M.D., M.R.C.P., M.R.C.S., M.C.P. and S., D.T.M. and H., D.P.H., since 1921 Director of Government Laboratories in the Federated Malay States, to be my Chief Medical Adviser in the Colonial Office.

3. The duties attaching to this post are more particularly as follows:

(1) To advise the Secretary of State generally on all medical and sanitary matters in the Colonies and Protectorates, and for this purpose to have access to all necessary departmental documents.

(2) With a view to the improvement of sanitation in the Tropical Dependencies, to ensure, so far as is possible, continuity of policy, co-ordination of action between different administrations, and the introduction of new ideas in the work of the Colonial Medical Services.

(3) To maintain a personal liaison and co-operation with other Government departments and other bodies in relation to health work in the Colonies, and to keep in touch with the medical schools in the United Kingdom.

(4) To preside over the Colonial Advisory Medical and Sanitary Committee.

(5) To advise the Secretary of State on all questions relating to the personnel of the Colonial Medical Services.

(6) To assist in the interviewing candidates for appointment as Medical Officers in the Colonies, and to be a member of the sub-committee on Colonial Medical appointments.

(7) To advise on all changes in the regulations and conditions of the employment of Colonial Medical Officers.

4. To remove any possibility of misunderstanding I would point out that, as will be apparent from the foregoing summary of the duties of the Colonial Medical Adviser, the post will be solely of an advisory character with no executive functions, and will in no way affect the responsibility of the Governor and the Head of his Medical Department in regard to the administration of medical matters in each Colony.

5. The Colonial Medical Adviser will be accommodated at the Colonial Office, and a suggestion has been made that the Heads and senior members of the Colonial Medical Services should be encouraged to call upon him during their leave. Such a practice would, I think, have the advantage that it would establish close personal relations between the Colonial Medical Adviser and Colonial Medical Officers, and I have to request that the desirability of taking advantage of this suggestion may be brought to the notice of senior members of the Medical Department who are serving under your administration.

6. The actual date on which Dr. Stanton will take up his duties is not yet determined, but it is expected that he will be available for duty in August next.

I have the honour to be, Sir,
Your most obedient, humble servant,
L. S. AMERY.

DEATHS IN THE SERVICES.

Colonel George Arthur Hughes, D.S.O., Army Medical Service (ret.), died on April 13th, aged 74. He was born at Clonmel, the son of the late James Hughes of Curragh Priven, Rathcormac, County Cork, and was educated at Trinity College, Dublin, where he graduated B.A., M.B., and M.S. in 1875. He entered the army as surgeon in 1889, became colonel on March 25th, 1904, and retired on August 26th, 1905. He served in Afghanistan in 1878-80 (medal); in the Bechuanaland expedition of 1884-85; in the Ashanti campaign of 1895-96 (mentioned in dispatches, Ashanti star); and in the Nile campaign of 1898, when he was present at the battle of Khartoum, was mentioned in dispatches, and received the medal, the Egyptian medal with a clasp, and the D.S.O.

The death of Lieut.-Colonel Reynolds Peyton Hetherington, R.A.M.C. (ret.), last November, aged 71, has only recently come to our notice. He was educated at Trinity College, Dublin, where he graduated M.A. in 1876, M.B. in 1878, and M.D. in 1897. He entered the army as surgeon in 1881, became lieutenant-colonel after twenty years' service, was placed on half-pay in 1907, and retired in 1909. He served in the Egyptian war of 1882 (medal with clasp); in the Nile campaign of 1884-85 (clasp); in Burma, with the Irrawaddy and North-Eastern columns, in 1891-92 (medal with clasp); and throughout the South African war, 1899 to 1902, in operations in Cape Colony and in the Orange Free State (Queen's and King's medals, with two clasps to each).

Brevet Colonel Henry Charlesworth, C.M.G., R.A.M.C. (ret.), died at Ealing on June 5th, aged 74. He was the son of the late Mr. M. Charlesworth of Longnor, Staffordshire, and was educated at Middlesex Hospital, taking the L.S.A. in 1872 and the M.R.C.S. in 1873. He entered the army as surgeon in 1875, became surgeon lieutenant-colonel after twenty years' service, and retired in October, 1902. He served in the Afghan war in 1878-80, and received the medal. He also accompanied, as medical officer, two special missions to the Sultan of Morocco in 1887 and in 1899-90. He received the C.M.G. in 1902, for services outside South Africa, in the South African war. After retirement he served as recruiting officer at Nottingham (1902) and in London (1909). He rejoined for service in the late war, and was employed on the north-east coast of England, and received the Order of St. John of Jerusalem for his services, as well as a brevet-colonelcy.

Obituary.

EDWARD HICKLING BRADFORD, M.D.,
Boston, Massachusetts.

THE death on May 7th of Dr. E. H. Bradford of Boston, Massachusetts, which we recorded in our issue of May 29th, removes a notable figure from the dwindling group of pioneers of modern orthopaedic surgery.

Edward Hickling Bradford was born in 1848, a direct descendant of a former governor of the State, and a member of that aristocracy of culture and service which has distinguished New England. He graduated at Harvard in 1869, in which university he was afterwards to become the first professor of orthopaedic surgery, in the chair endowed by the Buckminster Brown bequest. Having spent two years in Europe, he left general practice to take up orthopaedic surgery, which he studied under Taylor of New York. On returning to Boston he worked with Dr. Buckminster Brown, whom he afterwards succeeded as surgeon to the House of the Good Samaritan, the pioneer institution in Boston for the treatment of bone and joint disease in children. He became successively surgeon to out-patients at the City Hospital and surgeon to the Children's Hospital, until his work at the latter institution absorbed his attention. To this hospital he finally became surgeon-in-chief. His long connexion with it was concurrent with the gradual foundation and world-wide repute of the Boston school of orthopaedic surgery. Many visitors from Europe will associate his personality more than that of any one other surgeon with the work that was originated and performed there. His valuable work on the pathology and treatment of congenital dislocation of the hip-joint, both by bloodless and open methods, and his simple but valuable frame for the treatment of Pott's disease, are only specimens of the many improvements which he introduced into the practice of his specialty. One of the outstanding textbooks of orthopaedic surgery was produced by him in conjunction with the late Dr. R. W. Lovett, and *Bradford and Lovett's Orthopedic Surgery* has been for years an authority, and has reached its fifth edition.

Personally Dr. Bradford was one of the most modest and unassuming of men. Despite physical afflictions—he lost an eye and was permanently disfigured by a bicycle accident, and in his old age became almost totally blind—he maintained an equable and cheerful outlook on life and learnt to read Braille in his old age. Speaking to a friend about his loss of sight he said: "I was tempted to take a despondent view of life, but soon, however, on reflection, I realized that all this was but incidental and superficial compared with the resources of life. I found that life was a very rich opportunity which I had only half explored. I found that life itself could be nothing more than a temporary aspect of that spiritual experience in which I might prepare myself for larger service. This reflection returned to me not only courage but enjoyment of life." His calm and confident belief was not destined to be interrupted by suffering or illness. He died of a sudden cerebral haemorrhage, probably before he could be aware of any disturbance, at the age of 78.

His influence on the Boston school will long continue, and his actions smell sweet and blossom in the dust.

Dr. ROBERT B. OSGOOD of Boston writes:

Professor Bradford was one of America's greatest surgeons and one of the most admirable of men. He will be remembered as a pioneer in the renaissance of orthopaedic surgery, as a public servant in many civic and military positions of responsibility, as a great teacher, and as former dean of the Harvard Medical School. His courage was as constant as his initiative was strong. Many institutions and undertakings owed their inception and development to his vision and guidance. Honoured by his university and his colleagues, beloved by students and patients, his spirit was yet most gentle and humble. He accepted great personal handicap in the loss of sight as a challenge to explore life more fully, and he found endless resources and great happiness. Rarely has a man left a more stimulating record or presented to the world an example more worthy of emulation.

The increase of seniority allowed under the above conditions will not render an officer eligible to receive pay before the date of his actual entry into the Naval Service, but the time concerned shall reckon for increase of full, unemployed, and half-pay while on the active list and retired pay or gratuity on retirement or withdrawal, provided, in the case of a gratuity, that the officer has completed three years' full-pay service in the Royal Navy—that is, exclusive of the time spent as resident medical or surgical officer in a civil hospital.

In the event of a temporary officer, or an officer entered for short service, being transferred to the permanent list on or after July 1st, 1926, he may be granted the above concession, at Admiralty discretion, under similar conditions to those applicable to candidates who may enter the permanent service direct, except that the time shall not count for gratuity on retirement or withdrawal.

A candidate who is over the normal age limits for entry may be entered, notwithstanding, provided that the period of antedate for which he is eligible brings him, if deducted, within the ordinary limits.

R.A.F. MEDICAL SERVICE.

The Air Ministry announces a number of improvements in the conditions of service and emoluments of medical officers of the Royal Air Force.

The communiqué states that the Air Council attaches great importance to attracting into the service the best type of medical man, since on the capacity of the medical service depends to a peculiar degree the safety and efficiency of the Air Force. The duties of a medical officer in the Air Force include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service are liable, but the special study of the mental and physical stresses imposed upon the aviator in diverse circumstances and climates. The work to be done, therefore, has a high professional interest, and, with the improved conditions detailed below, the Ministry hopes that applicants of the best quality will be forthcoming.

Short-Service and Permanent Commissions.

Entry into the medical branch is by means of a short-service commission for three years on the active list extensible to five years. Entry into the service, therefore, does not commit the entrant to a permanent career, but leaves him free to return to the civil profession and the service free to choose the best officers for retention. Permanent commissions are granted by selection to officers holding short-service commissions, and in order that all short-service officers who desire to remain in the service may have a reasonable opportunity of doing so it has been decided that so far as practicable every entrant shall have a 50 per cent. chance of a permanent commission. Further, in order to assist short-service officers who pass to the reserve after five years to set up in private practice the gratuity issuable on leaving the active list has been increased to £700, the gratuity after three years' service remaining at £350 as hitherto.

Increase of Pay.

Increases of pay of from 2s. to 11s. a day have been granted in all ranks above flight lieutenant, and the scale in force from July 1st, 1926, is shown in the following table. The rates in the first column are "standard," and are liable to the extent of 20 per cent. to periodic variation according to the cost of living. The current rates are shown in the second column, and in the third the total yearly emoluments at current rates if allowances are drawn in cash in lieu of provision being made in kind. The cash allowances included are at current home rates for unmarried officers. Married officers over 30 years of age receive higher allowances.

Rank.	"Standard" Rate of Pay per Diem.	Current Rate of Pay per Diem.	Current Rate of Pay and Allowances per Annum.
	£ s. d.	£ s. d.	
Flying Officer	1 4 0	1 2 8	£557
Flight Lieutenant	1 6 0	1 4 6	£603
Flight Lieutenant after 2 years in the substantive rank	1 8 0	1 6 6	£545
Flight Lieutenant after 4 years in the substantive rank	1 10 0	1 8 4	£578
Squadron Leader	1 14 0	1 12 2	£760
Squadron Leader after 2 years in the substantive rank	1 18 0	1 15 10	£327
Squadron Leader after 4 years in the substantive rank	2 0 0	1 17 10	£364
Squadron Leader after 6 years in the substantive rank	2 4 0	2 1 6	£931
Squadron Leader after 8 years in the substantive rank	2 8 0	2 5 4	£1,001
Squadron Leader after 10 years in the substantive rank	2 10 0	2 7 4	£1,037
Wing Commander	2 15 0	2 12 0	£1,133
Wing Commander after 2 years in the substantive rank	2 17 0	2 13 10	£1,166
Wing Commander after 4 years in the substantive rank	3 3 0	2 19 6	£1,270
Group Captain	3 10 0	3 6 2	£1,463
Air Commodore	4 0 0	3 15 8	£1,691
Air Vice-Marshal	5 0 0	4 14 6	£2,100

Promotion to flight lieutenant occurs after two years' satisfactory service, and to squadron leader after ten years' service, reducible to eight years in exceptional cases. Promotion above squadron leader is by selection subject to minimum periods of service. The Director of Medical Services, if (as at present) an air vice-marshal, will receive the pay and allowances of his rank.

Retiring Allowances to Permanent Officers.

The gratuities issuable to permanent officers have been increased to £1,500 after ten years' service, and £2,500 after fifteen years' service. After twenty years' qualifying service officers are eligible for retired pay, the amount depending on age and length of service, and in the case of senior officers on rank. The maximum rates of retired pay are, subject to certain conditions, as follows, the rates for air commodores and air vice-marshals being new:

Rank.	"Standard" Maximum Rate.	Current Maximum Rate.
Air Vice-Marshal	£1,010	£954 10s.
Air Commodore	£950	£898
Group Captain	£900	£850 10s.
Wing Commander	£600	£567
Squadron Leader	£500	£472 10s.

House Appointments in Civil Hospitals.

To attract into the Service graduates who have had the valuable experience provided by a hospital appointment it has been decided, subject to certain conditions, to allow doctors who have held a resident appointment in a recognized civil hospital for not less than one year—of which, however, half may have been spent in a non-resident appointment—to enter the Air Force with one year's antedate counting for purposes of seniority, promotion, retired pay, and retiring gratuity. Service pay will not be issuable for the period spent in a civil hospital nor will the time count towards the gratuity payable to short-service officers on transfer to the reserve.

Course of Instruction on Entry.

Every officer on entry will in future receive eight weeks' instruction in the medical problems connected with flying and in his other Air Force duties.

Opportunities for Professional Study.

With a view to enabling permanent medical officers to take at least one general or specialist course at a civil or a service medical school it has been decided to allow study leave up to nine months in all to officers during the first sixteen years of their service. So far as possible officers will be allowed such leave when convenient to themselves, and their wishes as to the choice of subject and place of study will be consulted.

DIRECTOR-GENERAL A.M.S.

THE War Office announced on June 25th that Major-General Sir Matthew H. G. Fell, K.C.B., C.M.G., has been appointed Director-General Army Medical Services, in succession to the late Lieut.-General Sir William B. Leishman, K.C.B., K.C.M.G.

Major-General Fell served in France and Mesopotamia during the great war, and was eight times mentioned in dispatches. In 1918 he was lent to the Air Ministry, and acted as Director Medical Services R.A.F. till 1921. Subsequently he became Inspector Medical Services of the Army (1921-22), and Deputy Director Medical Services (1922-26), serving in Turkey, in the Northern Command, and in Egypt. He returned from Egypt to take up the appointment of Deputy Director-General Army Medical Services, in succession to Major-General Pollock, on June 1st, the day before Sir William Leishman died.

CHIEF MEDICAL ADVISER TO THE COLONIAL SECRETARY.

THE following circular letter has been addressed by the Secretary of State for the Colonies to officers administering the various colonies. It announces the appointment of a Chief Medical Adviser and defines his duties.

Downing Street,
15th June, 1926.

Sir,

I have the honour to inform you that I have for some time had under consideration the question of the creation of a post at the Colonial Office of Chief Medical Adviser to the Secretary of State whose duties will be to advise me generally on all medical and sanitary matters arising in connection with the Colonies, etc. The need for such an appointment has become increasingly apparent in view of the importance of ensuring continuity of policy in medical administration and co-ordination of progressive action between different services.

2. The Lords Commissioners of the Treasury have sanctioned

emphatic and lucid style, attracted his hearers, who soon became eager listeners, and, more important still, learners. If by chance one ever felt drowsy on these occasions it was not the fault of the lecturer, but due to a badly ventilated and overheated theatre, crowded with students. Anatomy lectures in those days were given at 4 o'clock, and followed immediately a large class held in the same theatre. His lectures on clinical surgery, delivered without a note, were really a delight as well as a profit, and I vividly recall, even at this distant period, some of them, and notably one on Caesarean section, in which he pleaded eloquently for its justification. His surgical operations, performed under a dense cloud of carbolic spray, were most carefully, skilfully, and deliberately executed, never hurriedly or with perturbation; and those involving a fine dissection—as, for example, a tumour in the anterior triangular space—showed him a master of his craft. His character and straightforward manner were an inspiration to his pupils, and all who had the privilege of coming under his influence will hold him in respectful and grateful remembrance as a great surgeon, anatomist, teacher, and orator.

Medical News.

THE University of London Bill was read a second time in the House of Lords on June 29th after a brief discussion, in the course of which the Archbishop of Canterbury expressed the hope that the position of the theological colleges would not be detrimentally affected. The bill is a Government measure, but is likely to be strenuously opposed in the House of Commons. The University of London Graduates' Association, of which Dr. Graham Little is president, has just issued two fly-leaves, calling upon graduates to bring pressure to bear upon M.P.s to procure the rejection of the measure. The chief grounds of objection seem to be the proposal to constitute a council to take on some of the functions of the present unwieldy Senate, and a fear that the interests of external students may be imperilled.

THE Minister of Health has issued a circular (698) to sanitary authorities and medical officers of health instructing them that it is not necessary for persons who have been in contact with a case of small-pox to abstain from their usual occupations, except when additional precautions are necessitated—as, for example, in the case of laundries or common lodging-houses, when the business or habits of the inmates of a house in which small-pox has occurred make it difficult for proper medical observation to be maintained. He finds that some local authorities when dealing with outbreaks of small-pox still think it necessary to quarantine in their homes the inmates of dwellings invaded by the disease, with the result that authorities are faced with claims for compensation for loss of wages. He therefore states that there is no legal authority for the payment of compensation in these circumstances, and it should not be expected that the Minister would be willing to sanction any such payment under the Local Authorities (Expenses) Act, 1887, in a case in which he was advised that the steps taken by the authority were not necessary for the protection of the public health.

THE KING has sanctioned the following promotions in and appointments to the Order of St. John of Jerusalem: As *Knights of Grace*, Captain C. A. Coventon, R.A.M.C.(T.A.), Dr. H. H. Bashford, Lieut.-Colonel J. C. Strathearn, M.D., F.R.C.S.Ed. As *Esquires*, Dr. Meredith Young, Dr. W. R. Bates, O.B.E., Major R. Briercliffe, O.B.E., M.B., Major J. A. Henderson, R.A.M.C.(T.A.), Dr. R. A. Clegg, Colonel J. J. Pratt, F.R.C.S., Major J. S. Mather, R.A.M.C.(T.A).

THE eighty-fifth annual meeting of the Royal Medico-Psychological Association will be held at the house of the British Medical Association, Tavistock Square, on Tuesday, July 13th, and three following days. Lieut.-Colonel J. R. Lord, C.B.E., M.B., will be inducted as president in succession to the late Sir Frederick Mott, and on the afternoon of Tuesday (13th) will deliver his presidential address on the clinical study of mental disorders. On the morning of July 13th Dr. G. A. Auden will present a clinical study of the madness of Ajax as conceived by Sophocles. On Wednesday morning, July 14th, two papers will be read—one on encephalitis lethargica by Dr. R. L. Mackenzie Wallis, and the other by Dr. C. Farran Ridge on symptoms referable to the basal ganglia in dementia praecox and epidemic encephalitis. In the afternoon the association will meet at the London County Hall, when Dr. Shrubsall will read a paper on educational adaptation of the individual child, and the medical examination rooms, laboratories, and other departments will be visited. On Thursday morning, at the British Medical Association House, a discussion on psycho-analysis and its development will be opened by Dr. W. H. Potts, and in the afternoon the Maudsley Lecture, which is to be a preliminary survey of the problem of the prevention of insanity, will be delivered by Professor George Robertson, President of the Royal College of Physicians of Edinburgh. After this Dr. F. H. Stewart will read a paper on Mendelism in bacteriology. In the evening the annual dinner will be held at the Victoria Hotel, for the commemoration of the charter. On Friday morning papers will be read on some forensic aspects of epilepsy by Dr. W. Norwood East, and on the prison psychosis by Dr. H. T. P. Young. In the afternoon a visit will be paid to the Horton Mental Hospital, Epsom, where demonstrations will be given by Colonel S. P. James, M.D., and Mr. P. G. Shute, illustrating the infection of mosquitos and other points relating to laboratory work in connexion with the treatment of general paralysis by malaria. Afterwards Dr. Nicol, in charge of that department at the hospital, will give a clinical demonstration, and various departments of the institution will be visited.

THE St. Bartholomew's Hospital War Memorial will be unveiled by H.R.H. the Prince of Wales, President of the hospital, on Thursday, July 8th, at 3 o'clock.

THE extension of the dental school of Guy's Hospital will be opened on Thursday, July 8th, at 3 o'clock, by the Right Hon. F. Dyke Acland, Chairman of the Dental Board of the United Kingdom.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that Mr. Cairns Forsyth will give a clinical demonstration on Monday, July 5th, at 2.30 p.m., at the Royal Waterloo Hospital, and on Thursday, July 8th, at 3 p.m., Mr. MacCallan will give one in ophthalmology at the Royal Eye Hospital. Both demonstrations are open to the medical profession, without fee. Beginning on July 19th, a two weeks' vacation course will be held at the North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham). The West End Hospital for Nervous Diseases will hold a late afternoon course from July 19th to August 11th in the out-patient department, at 73, Welbeck Street, W. There will be a series of demonstrations on eye diseases by members of the staff at the Royal Eye Hospital from July 12th to 24th, at 3 p.m. daily. Practical courses in obstetrics and child welfare are arranged to take place at the City of London Maternity Hospital; the duration of each course is one week. Practical courses in anaesthetics can be arranged at any time to suit post-graduates' requirements. Copies of all syllabuses, of the general course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

A MEETING of the Society of Superintendents of Tuberculosis Institutions will be held at 122, Harley Street, W., on July 5th, at 3 p.m. Dr. S. Roodhouse Gloyne will open a discussion on unsolved pathological problems associated with tuberculosis, and Dr. F. R. G. Heaf will read a paper on sedimentation tests.

GENERAL medical practitioners are invited to the annual meeting of the Maternity and Child Welfare group of the Society of Medical Officers of Health, at Caxton Hall, Westminster, on July 6th, at 5.30 p.m.; they will also be welcomed at the subsequent dinner at the Florence Restaurant, Rupert Street, at 7.30 p.m., tickets for which may be obtained from Dr. Margaret Emslie, 1, Upper Montague Street, W.C.1.

FROM July 19th to 23rd a congress of chemists will be held in London, in association with the annual general meeting of the Society of Chemical Industry. A large number of other chemical societies are co-operating in the congress. Sir Frederic L. Nathan will give the presidential address on "Industrial efficiency and the elimination of waste," and Lord Balfour will deliver the Messel Memorial Lecture. Papers will be read on a large number of subjects; at a joint meeting of the Bio-Chemical Society and the London section of the Society of Chemical Industry, Dr. H. H. Dale will read a paper on "The experimental study and use of hormones," and Dr. J. W. Trevan a paper on "Biological assay of hormones." Many entertainments and excursions have been arranged. Inquiries about the congress should be sent to the General Secretary, Society of Chemical Industry, Central House, 46 and 47, Finsbury Square, E.C.2, from whom a preliminary programme of the meeting can be obtained.

THE Association of Special Libraries and Information Bureaux (General Secretary, Mr. G. W. Keeling, 38, Bloomsbury Square, W.C.1) was formed to make available, to all who wish to use it, scientific and other special information to be found in periodicals and libraries. With the assistance of the Carnegie United Kingdom Trust, the association is compiling a directory of sources of specialized information in Great Britain and Ireland. The British Medical Association is represented on the council of the new association by its intelligence officer, Miss A. L. Lawrence. Associate membership is open to anyone interested.

Dr. ALEXANDER BUTLER died suddenly at his residence in Harrogate on June 12th. He was educated at the High School of Glasgow and graduated at Glasgow University. He commenced practice in Kilmacolm, but shortly afterwards moved to Port Glasgow, where he resided for nearly thirty years. Dr. Butler took an active part in the educational work of that town, being chairman of the educational committee. It was owing to his efforts that one of the merchant princes there erected a cottage hospital for the district. He also acted for over twenty years as surgeon to the Royal Garrison Artillery Corps. At the beginning of the Boer war he volunteered for service in South Africa, and was gazetted captain in the regular army. At the commencement of the great war he was a major in the Territorial Force, and very early went out to France. His work lay at various advanced stations, some of them within the firing line. Being invalided home with trench fever he afterwards acted officially at numerous home stations during the period of the war. He held the rank of colonel, and received the long service Territorial medal. Dr. Butler was an antiquary and anthropologist of no mean order, and had an extensive knowledge of Shakespeare combined with great literary ability. He was engaged in finishing a book on the antiquities of Fountains Abbey, which will be of great interest to the historian, and he had done much research work in the neighbourhood of Harrogate and Knaresborough. The world is the poorer for the loss of such men as Dr. Butler.

We regret to report the death of Dr. CLAUD ANTHONY HOLBURN of Darlington on the evening of June 16th. While reversing his car he capsized into a ditch and was killed outright. Dr. Holburn was only 40 years of age, and was just becoming well established in his practice, which he had started on leaving the R.A.M.C. after the war. He received his medical education at Sheffield, where he obtained the Kaye scholarship in 1904-05. He took the diplomas of M.R.C.S., L.R.C.P.Lond. in 1908. His former appointments included those of house-surgeon to the Sheffield Royal Hospital, assistant house-surgeon to the Chesterfield and North Derbyshire Hospital, and anaesthetist to the Hospital for Women and Children, Leeds. Dr. Holburn was a member of the Darlington Division of the British Medical Association. He leaves a widow and three young children.

Dr. LAURENCE MCNABB of South Shields has died, after an illness of several months, at the age of 59. Dr. McNabb was a native of North Ireland, who received his medical education at the University of Durham, where he took the degree of M.D. After holding junior staff appointments at the Newcastle Infirmary and at Preston he served as medical officer to the Harton Institution, under the South Shields guardians. Dr. McNabb then entered private practice, and became district medical officer and public vaccination officer under the Poor Law authority. He was one of the managers of St. Bede's Roman Catholic School, South Shields. He took a keen interest in sport, and was one of the oldest members of the South Shields Golf Club. He leaves a widow, two sons, and five daughters.

Dr. HORATIO W. A. COWAN, who died on May 28th, was well known in London as a most energetic and thoroughly up-to-date practitioner. He was born in Inverness, and received his medical education at Aberdeen University, where he graduated M.B., C.M. in 1895. Afterwards he studied at St. Bartholomew's Hospital, and while acting as assistant to a practitioner also found time to hold clinical appointments at the Throat Hospital, Golden Square, Moorfields Eye Hospital, and the Brompton Hospital. He served for a time in the Royal Navy, passing out of Haslar first of his year. The want of professional work in the service made him retire after two years, to start in practice in Fitzroy Square, London, where he continued until his death. He was a most sympathetic practitioner, who never grudged time or work in the interests of his patients. All who knew him soon recognized, beneath his quiet manner, the sterling character of the man and the solidity and soundness of his judgement in medical matters, founded on a deep and wide acquaintance with clinical medicine and medical literature. Dr. Cowan will be greatly missed by colleagues, patients, and his many friends. He was a most hard and industrious worker, often doing two or three men's work, especially during the war, when, in addition to being a voluntary medical officer to the Flying Corps, he acted as skin physician at Middlesex Hospital. These excessive demands on his strength probably undermined his resistance, and paved the way for the onset of the cardiac condition which was the cause of his sudden death. Outside his professional life Dr. Cowan had many interests; both motoring and yachting attracted him. He will indeed be missed by a large circle of friends and by many who have been under his care. He leaves a widow, one daughter, and a son, who is succeeding him in practice.

We regret to announce the death of Dr. SYDNEY GWENFFRWD MOSTYN, medical officer of health for Darlington, at the age of 59. He was killed in a motor accident on June 22nd while touring near Fort William in the Western Highlands. Dr. Mostyn received his medical education at Oxford and St. Bartholomew's Hospital, graduating M.B., Ch.B. in 1902; he obtained the M.R.C.S., L.R.C.P. diplomas in the same year, and the D.P.H.Camb. in 1903. In 1902 he became medical officer to the Infectious Diseases Hospital at Newcastle, and two years later received the appointment of medical officer of health for the county borough of South Shields. In 1911 he was appointed medical officer of health for Darlington, where he organized the first health week in that city two years later. Dr. Mostyn, who was a Fellow of the Society of Medical Officers of Health, the Physical Society of London, and the Royal Sanitary Institute, was very popular in Darlington, where he was an active member of the Rotary Club and the Darlington and Teesdale Naturalists' Field Club.

Dr. JOHN WILSON of Lanchester, county Durham, died on June 18th at the advanced age of 91. He was born in Scotland, and studied medicine at Glasgow University, where he graduated M.D. in 1860. After practising for a short time in his native country he became assistant to the late Dr. George Renton of Blackhill. He subsequently removed to Lanchester, where he was appointed medical officer under the Lanchester board of guardians, which post he resigned in 1914 after fifty-two years' service. In 1884 Dr. Wilson was appointed to the Commission of the Peace for the county; for many years he acted as chairman of the Lanchester bench. High tributes were paid to Dr. Wilson's work and character at the sitting of the Consett petty sessions on June 21st. He is survived by one daughter and four sons.

The following distinguished foreign medical practitioners have recently died: Dr. Brugnatelli, professor of obstetrics and gynaecology in the Sassari faculty of medicine; Dr. Agular Jordan, a well known pediatrist of Valencia; Dr. T. Wyder, formerly professor of gynaecology at Zürich; Dr. C. Rugi, professor of gynaecology at Berlin; Professor F. von Soxhlet, the inventor of the well known apparatus for the sterilization of milk; Professor J. Kyrle, a Viennese dermatologist; Dr. S. Patellini Rosa, professor of social eugenics at Milan; and Dr. Edouard Moutard-Martin of Paris, a specialist in diseases of the chest.

THE LATE SIR HENRY MORRIS.—Mr. W. A. Maggs writes: In 1877, when I entered as a student at the Middlesex Hospital, Mr. Henry Morris (later Sir Henry) was the lecturer on anatomy. Both by his own personality and by his intimate acquaintance of the subject he was accustomed to keep the class well in hand, and thoroughly interested; indeed, he seemed to make the dry bones speak. His handsome presence, fine voice,

DR. W. W. KEEN calls our attention to the omission in our annotation on American medical libraries (BRITISH MEDICAL JOURNAL, May 22nd, p. 878) of any allusion to the library of the College of Physicians of Philadelphia, to which, however, we have made references on several previous occasions. This library now contains over 150,000 volumes. The report for the year 1925 shows that there has been considerable expansion. A number of interesting medical classics have been added, as well as many current medical publications. Dr. Keen has presented to the library a transcript and photostat negative of a letter written by William Harvey, probably in 1631, to Viscount Dorchester; and proof copies of the portraits of Sir James Mackenzie and Sir Clifford Allbutt received from the editor of the BRITISH MEDICAL JOURNAL. The library committee recently sold the entire collection of duplicates in its possession to the medical school of the University of Otago, New Zealand, at a nominal price, for the formation of a library in that university.

DR. J. P. J. POWELL, on his retirement after thirty-five years of practice at Sennybridge, near Brecon, has been presented by his friends and patients with an illuminated address, a silver tea and coffee service, a cabinet of cutlery, and a cheque for over £300.

THE following have been elected Fellows of the Royal Sanitary Institute: Colonel Harold P. W. Barrow, C.M.G., D.S.O., O.B.E., late R.A.M.C., Dr. J. J. Buchan (M.O.H. Bradford), Miss Josephine L. D. Fairfield, C.B.E., M.D. (Divisional Medical Officer, Public Health Department, L.C.C.), Dr. James Fenton (M.O.H. Kensington), Dr. William Hanna (Deputy M.O.H. Liverpool), Dr. J. F. C. Haslam, *M.C.* (Tropical Diseases Bureau), Dr. J. J. Jervis (M.O.H. Leeds), Lieut.-Colonel G. R. Leighton, M.D. (Medical Officer (Foods), Scottish Board of Health), Dr. R. St. J. Macdonald (Department of Hygiene, McGill University, Montreal), Dr. A. T. Nankivell (M.O.H. Plymouth), Dr. H. P. Newsholme (M.O.H. Croydon), Dr. Harvey Sutton (Department of Public Instruction, Sydney, N.S.W.), Sir Edward N. Thornton (Union Health Department, Pretoria, S.A.), Sir Malcolm Watson (Klang, F.M.S.), Dr. J. B. Wilkinson (M.O.H. Oldham), and Dr. W. J. Wilson (Professor of Hygiene and Public Health, Queen's University, Belfast).

DR. F. E. FREMANTLE, M.P., has been appointed a deputy lieutenant for the county of Hertford.

THE following appointments have recently been made in the Spanish medical faculties: Dr. Dámaso Rodrigo Pérez of Madrid, professor of children's diseases at Valencia; Dr. Fernando Casadésos y Castells, professor of oto-rhino-laryngology at Barcelona; Dr. Vidal Jordan, professor of children's diseases at Valladolid; Dr. Pedro Ara y Sarriá, professor of descriptive anatomy and embryology at Valencia; and Dr. Antonio García Tapia, professor of oto-rhino-laryngology in the Madrid Faculty of Medicine.

THE Carlo Forlanini Foundation has offered a prize for an original work on the morbid anatomy, pathology, or treatment of pulmonary tuberculosis, which must be sent in by December 31st, 1926. Further information can be obtained from the Director, Ospedale Maggiore, Milan.

THERE has recently been a considerable increase in the number of abortions in Germany. Thirty or forty years ago there were only nine or ten abortions in every hundred pregnancies, whereas at present the proportion is 40 per cent., and 89 per cent. of them are criminal. The birth rate has fallen from 36.9 to 21.6 per mille.

THE following subjects will be discussed at the section of medical electrology and radiology of the French Association for the Advancement of Science, to be held at Lyons from July 26th to 31st under the presidency of Professor Cluzet: (1) Radiodiagnosis of affections of the duodenum, introduced by MM. Bécière and Porcher of Paris; (2) Roentgenotherapy of epitheliomata, introduced by M. Coste of Lyons; (3) Electro-radiological treatment of neuralgia, introduced by MM. Zimmern and Cottenot of Paris; (4) Present technique of radium treatment of cancer, introduced by M. Rechov of Bordeaux; (5) Present technique of ultra-violet ray therapy. Further information can be obtained from Professor Cluzet, 106, Rue de l'Hôtel de Ville, Lyons.

PROFESSOR H. SELTER of Königsberg has succeeded Professor Kisskalt in the chair of hygiene at Bonn, and Professor Theodor Brugsch, director of the second medical clinic at Berlin, has succeeded Professor Jaksch in the chair of internal medicine in the German university at Prague. Professor Stoeckel of Leipzig has succeeded the late Professor Bumm in the chair of obstetrics and gynaecology at Berlin.

AMONG the subjects to be discussed at the Dermatological Section of the German Association of Natural Research, to be held at Düsseldorf from September 19th to 26th, are herpes zoster and varicella, introduced by Professor Lipschütz of Vienna, and malaria treatment of the early stages of syphilis, introduced by Dr. Benig of Essen.

PROFESSOR CHRISTIAN BAEUMLER, whose name stands eighth on the list of Fellows of the Royal College of Physicians of London, recently celebrated his ninetieth birthday at Freiburg in Baden, where he had become professor of medicine at the university and director of the medical clinic in the autumn of 1876; he retained these appointments until not very long ago. The reception took place in the aula of the university. The medical faculty of the university arranged a lunch in the town for Professor and Mrs. Baeumler, and among those present were all the official personages of the university and town, many of the professor's former assistants, some of whom had specially come from abroad for the occasion, and a number of the medical practitioners of Freiburg and their wives. Professor Baeumler was house-physician at the German Hospital in London from October, 1863, to 1866, and assistant physician from 1867 to 1872. He remembers his work in London with the greatest pleasure and has very often referred to his medical experiences there in conversation and in his lectures and published writings on a variety of medical subjects. At the German Hospital he contracted typhus fever and was the first to suggest the correct diagnosis of his illness; this fact was related long afterwards by the late Sir Hermann Weber, with whom he was on close terms of friendship. Sometimes the two made Alpine tours together in Switzerland and Tyrol, and both enjoyed to the uttermost the open-air exercise and beautiful scenery.

THE Council of the Medical Women's International Association will hold its next meeting in Prague on August 26th. Following this there will be meetings and social events to which any medical women will be welcome. The agenda of the open meeting includes discussions on (1) tuberculosis and pregnancy, (2) women police-surgeons. It is hoped that some members of the Medical Women's Federation of Great Britain will find it convenient to include Prague in their holiday itinerary. Any further particulars may be obtained from the secretary, Miss M. I. Robertson, M.B.E., 28, Weymouth Street, W.1.

FROM 1900 to 1925 inclusive 7,134 medical students, including 527 women, have been enrolled in the four Dutch universities of Leyden, Utrecht, Groningen, and Amsterdam. During the same period 4,201 students, including 239 women, became graduates.

THE date of the third International Congress for Life Saving and First Aid to the Injured, which is to be held at Amsterdam, has now been fixed for September 7th to 11th. The honorary president of the congress is Prince Henri of the Netherlands. The Duke of York is president of the British section of the congress. There are to be eleven sections, dealing with subjects appertaining to first aid in the emergencies of various activities in life. The St. John Ambulance Association and the National Fire Brigades Association are to send teams for international competitions in life saving and first aid. It is intended to form parties to travel from England to the congress, and reduced rates are offered. Dr. D. A. Coles, Professor E. L. Collis, Sir Thomas Oliver, and Dr. Theodore Thompson are the British members of the Permanent Committee. The secretary of the British section is Miss M. A. Harvey, 7, Cambridge Street, Hyde Park, W.2.

THE fifth congress of the International Union against Tuberculosis will be held at Washington from September 30th to October 2nd, when the principal subjects for discussion will be tuberculous infection in the adult, the anatomical structure of the tubercle, and the relation between milk and tuberculosis. The congress will be followed by the annual general meeting of the American Society for Combating Tuberculosis, to which members of the congress will be invited.

PROFESSOR R. CRUCHET, who has hitherto held the chair of general pathology and therapeutics, has been appointed professor of children's diseases in the Bordeaux Faculty of Medicine.

A CHAIR of nrology has been founded at the Athens Faculty of Medicine, with Professor S. Oeconomos as its first occupant.

The World's Children is the monthly journal of the Save the Children Fund, and is described also as the "English-speaking organ of the Declaration of Geneva." In the June number the Bishop of Gibraltar describes the work of the Anglo-Serb Children's Hospital in Belgrade, which is maintained by British charity through the Save the Children Fund. The hospital owes its origin to the energy of Dr. Katherine Macphail, who after the armistice devoted herself to the relief of sick and starving Serbian children; 40,000 children have been treated since the foundation of the hospital. The rest of this number of the journal consists in descriptions of the activities of various bodies on behalf of children throughout the world.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

DR. D. M. MACDONALD (Arnside, Westmorland) asks for references regarding the use of selenium in cancer of the lung.

THE ADMINISTRATION OF OXYGEN.

DR. E. P. POULTON (London, W.) writes in reply to "Oxygen," who asked for advice as to the best way of administering oxygen (JOURNAL, March 20th, p. 553): Haldane's apparatus, or a more satisfactory modification of it devised by Dr. Davies, and made by Siebe, Gorman and Co., Westminster Bridge Road, S.E., will certainly ensure the patient getting a sufficient concentration of oxygen, but this method is extremely wasteful. I am at present experimenting with a closed circuit form of apparatus in which any degree of concentration of oxygen may be administered, while there is no waste of oxygen at all. This apparatus is being made by Down Bros. In acute cases a moderately successful way of giving oxygen is a nasal catheter which is passed through to the back of the nose. It is certainly much the simplest method of giving it, as it requires no special apparatus, but it is impossible to obtain high percentage by this means.

CAUSE, PREVENTION, AND TREATMENT OF WHOOPING-COUGH.

DR. P. F. JAMES (Merthyr Tydfil) writes: The focus of infection in whooping-cough is probably the sublingual fossa, the virus irritating the sensory filaments of the glosso-pharyngeal nerve, causing contraction of the middle constrictor and stylo-pharyngeal muscles, constriction of the pharynx, irritation friction, prolonged paroxysmal coughs, whoops, and vomiting. The pulmonary gaseous diffusion is unbalanced; the blood is supersaturated with carbon dioxide and deficient in oxygen. The cyanosis produces paresis of the nerve centres in the medulla and elsewhere, relaxation of the constriction, and termination of the cough. Recumbency would account for the nocturnal frequency of the cough. A lesion is frequently present at the junction of the fraenum linguae, with a ridge crossing the floor of the mouth. Treatment should be by sublingual medication; the weak tincture of iodine (*B.P.*) and glycerin should be applied lightly on alternate days with wool swabs. The facial change of the children and the witness of the mothers indicate the improvement. Treatment in institutions on these lines, with controls, would be desirable, and it is with a view to suggesting this that I am recording my personal experience.

*** The lesion to which Dr. James alludes has, of course, often been noted in describing the symptoms of whooping-cough. At one time, as pointed out by a correspondent in the BRITISH MEDICAL JOURNAL, March 8th, 1879 (p. 348), sublingual ulcer was looked upon as pathognomonic of the disease. The correspondent had found it so often absent in whooping-cough, and yet present in patients with severe cough, as in cases of catarrhal pneumonia, that he had come to the conclusion that ulcer of the fraenum was caused by the tongue being projected over the lower incisor teeth—in fact, he regarded the ulcer as a complication of the disease from which the child was suffering. In a paper on whooping-cough by Drs. D. Paterson and J. M. Smellie (BRITISH MEDICAL JOURNAL, May 6th, 1922, p. 713) it is stated that sublingual ulcer was present in 18 per cent. of 62 cases in which it was looked for, and usually developed during the second or third week of the disease.

TUBERCULIN TREATMENT OF TUBERCULOSIS.

"TUBERCULOSIS OFFICER" writes: I note with interest the proposal of Dr. Camac Wilkinson to reopen his tuberculin dispensaries. May I ask if any investigation was made as to the treatment by the officers of the Ministry of Health, and, if so, what was the verdict as to the efficacy of the treatment?

*** Our correspondent probably has in mind the inquiry made in 1923 at the request of the Ministry of Health by the Medical Research Council. The matter was referred to at some length in our issue of December 8th, 1923 (p. 1107). It appears that three medical men were deputed by the Medical Research Council to visit Dr. Camac Wilkinson's dispensary, but did not have the advantage of meeting him. The report of the visitors was not, so far as we are aware, published and was described as confidential, but we were informed that, in their opinion, Dr. Camac Wilkinson's system of treatment "did not appear to have claims over other methods of treating tuberculosis, either with or without tuberculin, which would justify its general adoption." To this Dr. Wilkinson replied by the publication of an essay on the tuberculin dispensary for the poor. We did not then feel that the information in our possession was sufficient to justify the expression of a decided opinion. So far as we are aware, nothing further has happened since then until the publication of Dr. Wilkinson's book, recently reviewed (June 19th, p. 1039) in our columns. As the report was never published we do not know how thorough the visitation was, but we are inclined to think that in view of the increased interest now taken in treatment by tuberculin the time has come when the matter should be reopened. Letters on tuberculin in the treatment of tuberculosis will be found at page 35.

INCOME TAX.

Sale of Share in Practice.

"NORTHERNER" sold a half-share in his practice in January, 1925, and his partner paid him a sum down in October and another instalment in December, 1925. How should their returns be made for the year ending April, 1926?

*** A declaration should be made on the appropriate form, which the assessor or inspector will supply, setting out the average profits of the practice for the three years prior to April, 1925, and also the basis of division of the partnership profits. Then each partner should make a separate declaration setting out his share of the partnership profits, as shown in the other form, and any other income he may have. The payments made by one partner to the other for the purchase of the share in the practice are capital payments and do not affect their income tax returns.

Expense of Books.

A. W. M., who holds an appointment in the navy, asks whether he understands correctly that there is an income tax allowance of £10 10s. for books and £7 7s. for medical publications.

*** There is no such standard allowance by law, the legal position being that a taxpayer is allowed against the assessment of the emoluments of employment expenses "wholly exclusively and necessarily in the performance of the duties of the office." It may be that there is a departmental rule to make the allowance quoted to persons holding such appointments as "A. W. M." holds, but we have no knowledge of it. If there is such a rule it would be convenient and not unreasonable. Anyhow, we advise our correspondent to claim that allowance when sending in his return.

Motor Car Replacement.

"A. M.'s" motor transactions have been as follows:

October, 1921	Purchased *x* for	£241
March, 1925	Sold *x* for	£ 25
March, 1925	Purchased *y* for	£284

The then cost of an *x* car would have been £133. It will be seen from the above that "A. M." could have replaced his old *x* by a new one at a net cost of £133−£25=£108; he actually expended £284−£25=£259, thereby obtaining a car that suited him better, but claimed that he should be allowed to treat as replacement expenditure that sum less the increased outlay (£284−£241=£43)—that is, £216.

*** "A. M." might refer to our reply to "J. A. S." in our issue of April 3rd last. The matter is one for the adjudication of the district commissioners, but there are strong arguments available to support the view that only £108 is allowable. We believe that the correspondent to whom we replied in April succeeded in obtaining from his inspector of taxes a larger allowance than was at first agreed to, and "A. M." may perhaps obtain some equitable compromise by discussion. We cannot recommend him to take his claim to the point of appealing personally to the Commissioners.

Association Notices.

NOTICE OF ANNUAL GENERAL MEETING.

NOTICE CONVENING MEETING.

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the British Medical Association will be held in the Mechanics' Hall, Nottingham, on Tuesday, July 20th, 1926, at 2 p.m. Business: (1) Minutes of last Meeting; (2) Appointment of Auditors; (3) Report of election of President for 1927–28.

ALFRED COX, *Medical Secretary.*
L. FERRIS-SCOTT, *Financial Secretary and Business Manager.*

NOTICE OF EXTRAORDINARY GENERAL MEETINGS.

NOTICE IS HEREBY GIVEN by Order of the Council that an Extraordinary General Meeting of the British Medical Association will be held in the Mechanics' Hall, in the City of Nottingham, on Friday, the 16th July, 1926, at 4.45 o'clock in the afternoon, when the following Resolution will be proposed as an Extraordinary Resolution, namely:

That the Articles of Association of the British Medical Association be altered in manner following, namely:

(1) By adding to paragraph (*a*) of Article 10 the following proviso, namely:

"Provided that no such representation shall be entertained if made by a Division or Branch within an area outside the United Kingdom for which a Federal Council has been formed under the Articles and By-laws where that Federal Council has been invested with the powers of paragraph (*c*) of this Article."

(2) By deleting the whole of paragraph (*b*) of Article 10 and inserting in place and stead thereof the two following new paragraphs, namely:

"(*b*) The Council shall have power, on the application of the Branches within an area outside the United Kingdom for which a Federal Council has been or is being formed under the Articles and By-laws, to invest that Federal Council with the powers of the next succeeding paragraph of this Article."

"(*c*) (i) The Council of each Branch not in the United Kingdom, having a membership of not less than thirty and not being within the area of a Federal Council invested with the powers of this paragraph, upon the representation of any two members of such Branch, and

"(ii) Any Federal Council invested with the powers of this paragraph, upon the representation of any Branch within the area of that Council,

shall have power at a Special Meeting of the Branch Council or Federal Council (as the case may be), convened at not less than one month's notice, and after due inquiry of which not less than twenty-eight days' notice in writing, specifying the time and place at which he may be heard in his defence, shall have been given to the Member, to expel from membership of the Association any member of such Branch whose conduct shall be held by the Branch Council or the Federal Council (as the case may be) to be such as to render him liable to expulsion under paragraph (*d*) of the last preceding Article."

(3) By inserting in original paragraph (*c*) of Article 10 immediately after the words "Branch Council" the words "or of a Federal Council."

(4) By inserting in original paragraph (*e*) of Article 10 immediately after the words "Branch Council" the words "or by a Federal Council."

(5) By relettering original paragraphs (*c*), (*d*), and (*e*) of Article 10, (*d*), (*e*), and (*f*) respectively.

Should the above Resolution be passed by the requisite majority it will be submitted for confirmation as a Special Resolution to a further Extraordinary General Meeting, and such meeting will be held at the British Medical Association House, Tavistock Square, London, W.C.1, on Tuesday, the 3rd day of August, 1926, at 2.30 o'clock in the afternoon, for the purpose of considering and, if thought fit, confirming such Resolution as a Special Resolution accordingly.

Dated this 21st day of June, 1926.

By Order of the Council,

L. FERRIS-SCOTT, *Financial Secretary and Business Manager.*

British Medical Association House, Tavistock Square, London, W.C.1.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—A special meeting of the Coventry Division will be held at the Coventry and Warwickshire Hospital on Tuesday, July 6th, at 8.30 p.m. Agenda: Correspondence; instructions to representatives.

CAMBRIDGE AND HUNTINGDON BRANCH.—The eighty-second annual meeting of the Cambridge and Huntingdon Branch will be held at the Icknield Hall, Letchworth, Herts, on Thursday, July 8th, at 1 p.m. Agenda: Annual report and election of officers. At 1.30 members will be entertained at lunch by the President-Elect, Dr. Hyslop Thomson, and the Chairman of the East Herts Division, Dr. Norman Macfadyen. After lunch Dr. Hyslop Thomson will deliver his presidential address on the diagnosis of disease in relation to preventive medicine.

CAPE OF GOOD HOPE (WESTERN) BRANCH.—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, July 30th, when Professor M. R. Drennan and Professor W. A. Jolly will introduce a discussion on the heart.

EAST YORK AND NORTH LINCOLN BRANCH.—The seventieth annual meeting of the East York and North Lincoln Branch will be held in Powolny's Banqueting Rooms, King Edward Street, Hull, on Saturday, July 10th, at 1 p.m. Luncheon at 1.30, at which Dr. D. R. Moir will take the chair and deliver his inaugural address.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of the Liverpool Division will be held at the Liverpool Medical Institution on Wednesday, July 7th, at 4 p.m. Agenda: Instructions to representatives to Annual Meeting; an appeal by Dr. R. W. MacKenna for greater support to medical charities.

NORFOLK BRANCH.—The annual meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital on Wednesday, July 7th, at 3.30 p.m. Agenda: Report of Branch Council and annual statement; induction of the new President, Mr. William Henry Fisher, M.S., M.B., B.Ch., by the retiring President; appointment of a President-Elect and two Vice-Presidents. Address by Mr. Aleck William Bourne, M.B., B.Ch.Cantab., F.R.C.S., obstetric surgeon, St. Mary's Hospital and Queen Charlotte's Hospital, on the scope of Caesarean section. Tea will be served in the hospital grounds, by the kind invitation of Dr. and Miss Fisher, at 4.15.

OXFORD AND READING BRANCH.—The annual meeting of the Oxford and Reading Branch will be held at the Royal Berkshire Hospital, Reading, on Friday, July 9th, at 3.15 p.m. Agenda: Election of officers. Discussion on exophthalmic goitre: (*a*) Surgical treatment, Mr. Romanis; (*b*) Medical aspects, Dr. Gardiner-Hill; (*c*) Cardiac complications, Dr. Cassidy. Cases will be shown by Sir Stewart Abram, Mr. Secretan, Dr. Esther Carling, and Dr. Lambert. In the forenoon the Collier Golf Cup will be competed for at Huntercombe against bogey. Members may choose their partners, but must play at three-quarters of lowest handicap. Cards to be handed to the secretary before the clinical meeting.

SOUTHERN BRANCH: WINCHESTER DIVISION.—A meeting of the Winchester Division will be held at the George Hotel, Winchester, on Wednesday, July 7th, at 3 p.m. The business includes instructions to the divisional representative. At 3.30 a British Medical Association Lecture on the diagnosis and treatment of placenta praevia will be given by Dr. J. D. Barris, F.R.C.P., F.R.C.S., physician accoucheur, St. Bartholomew's Hospital. A large attendance is hoped for; non-members will be very welcome.

YORKSHIRE BRANCH: SHEFFIELD DIVISION.—A general meeting of the Sheffield Division will be held at the Church House, St. James's Street, Sheffield, on Friday, July 9th, at 8.30 p.m. It is especially desired that all members will endeavour to attend. Agenda: Annual Report of Council, which will be presented as follows: *Science*, Dr. Barnes; *Medical Ethics*, Dr. Russell; *Medico-Political*, Dr. Forbes; *National Insurance*, Dr. Helm; *Puerperal Morbidity and Mortality*, Mr. King.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

SURGEON REAR-ADMIRAL A. MACLEAN, C.B., D.S.O., is placed on the retired list at own request, in order to facilitate the promotion of more junior officers.

Surgeon Commander P. F. Alderson is placed on the retired list with the rank of Surgeon Captain.

Surgeon Commanders J. McA. Holmes, D.S.O., to the *Pembroke* for R.N. Hospital, Chatham, temporary additional; A. R. Schofield to the *Iron Duke* and as Squadron Medical Officer on recommissioning; J. G. Boal to the *Victory* for R.N. Hospital, Haslar.

Surgeon Lieutenant Commanders A. C. Shaw to the *Pembroke* for R.N. Hospital, Chatham; A. G. Bee to the *Vivid*, additional for R.M. Infirmary, Plymouth; A. W. North to the *Ambrose*.

Surgeon Lieutenant C. H. Savory to be Surgeon Lieutenant Commander.

Surgeon Lieutenants R. R. Baker to the *Iron Duke* on recommissioning; J. H. B. Crosbie to the *Agamemnon* (July 14th) and to *Centurion* (undated).

Surgeon Lieutenant (short service) D. H. Kernohan has transferred to the permanent list.

Dr. W. T. Donovan has entered as Surgeon Lieutenant and appointed to R.N. Hospital, Haslar, for course.

ROYAL NAVAL VOLUNTEER RESERVE.

Probationary Surgeon Lieutenants L. D. Nelson and D. R. Burbury to R.N. Hospital, Haslar, for twenty-eight and fourteen days' training respectively.

ROYAL ARMY MEDICAL CORPS.

Colonel F. F. Carroll, D.S.O., half-pay list, and Colonel N. H. Ross, late R.A.M.C., retire on retired pay.

Captain W. Bruce, O.B.E., relinquishes the acting rank of Major.

R. L. J. Le Clezio to be temporary Lieutenant.

Agents' Fees.

"McL." recently held a six months' assistantship. He has been assessed for those earnings, but the inspector refuses to allow a deduction for the fee charged by the agent through whom he took up the post.

*** If "McL." habitually takes up temporary assistantships we consider that he has grounds on which to claim that he is carrying on his profession in that way and is chargeable under Schedule D; in that event we think he has a good claim to the deduction on the ground that it is a normal and recurring expense attributable to his earnings. If, however, he is assessable (as normally practitioners who act as assistants are assessable) for earnings of "employment," then the Schedule E rule applies and the inspector's view is correct—that is, that the expense was incurred not "in the performance of the duties" of the employment but anterior thereto, and, further, were not "necessary" so far as the terms of his contract of employment were concerned.

Residence in the United Kingdom.

"X" left his employment in a hospital in England in July, 1923. During 1924–25 he was resident in England as his father's (non-paying) guest. In 1925–26 he was in England five months as his father's guest, spending the remaining seven months travelling with a patient. Can he be held to have been "domiciled" in England for 1925–26?

*** The material question is one of residence rather than domicile. "X" is liable to income tax as a British resident for 1925–26 unless he can show that when he came back to the United Kingdom he did so for a temporary purpose, and not with the intention of establishing a residence here. The question of intention is fundamental, and it is therefore impossible to answer the question specifically.

LETTERS, NOTES, ETC.

STERILIZING THE TYMPANUM.

"PUNCTILIOUS" writes: In your issue of June 12th there is a valuable and in some respects instructive contribution by Dr. Smurthwaite on "The treatment of throat and ear cases in children," which shows the magnificent results achieved by him in connexion with "the Gloucester scheme for the extension of medical services." The gratifying success attained is no doubt largely due to the fact that the work has been entrusted to the hands of a zealous and really expert specialist.

There is, however, at least one point in Dr. Smurthwaite's paper which, in my opinion, ought not to be allowed to pass unchallenged. In mentioning the well known technique usually carried out at the conclusion of the subradical mastoid operation in children he states that "the middle ear is made *thoroughly aseptic*" (the italics are mine) "by syringing through the aditus at the time of operation." It would be highly informing to be told exactly how Dr. Smurthwaite thinks this magical and immediate sterilization of the tympanum can be accomplished. I only know of two methods (neither often employed, I imagine) by which even some approach to sterilization can be brought about, and that is either (1) by thoroughly swabbing out the suppurating middle ear with some escharotic fluid, such as deliquesced pure carbolic acid or pure chromic acid, or else (2) by means of ionization. Syringing with the antiseptic solutions usually employed will obviously not render the middle ear aseptic right off the reel, as Dr. Smurthwaite leads us to infer, as surface lavage cannot reach the septic organisms embedded in the tissues.

I fancy the explanation of the appearance of the misstatement by Dr. Smurthwaite which I have quoted is to be found in the fact that he forgot to submit his original rough draft to careful revision. There is further internal evidence of this, for several inaccuracies have crept in, such as writing of "the drum" when the context shows that the drumhead (that is, the tympanic membrane) was in his mind; again, he writes as if the tonsillar sinus (or fossa) was the same thing as the bed of the tonsil; and yet again he implies that the reverse guillotine technique of Whillis and Pybus is the same as that of Sluder.

Although Dr. Smurthwaite's paper is unfortunately marred by these instances of careless writing and misleading statements, they do not affect the great value of the practical work he has so successfully carried out.

SALT AND CANCER.

MR. FREDERICK T. MARWOOD, J.P., of Lancashire, a layman who has taken great interest in the causation of cancer, has sent us a reprint in pamphlet form of an article, "Salt and cancer," he contributed to the *Medical Officer* of January 9th last. Mr. Marwood is a modest person, who says that he is neither a Jenner nor a dairymaid; but that as jewels are sometimes found in dustbins, something of service might be found in the dustbin of his mentality. The article contains little except Mr. Marwood's view that salt is a powerful chemical, which has been recommended for removing ink stains and iron-mould and for cleaning baths, and that, therefore, in excess it may cause serious trouble to our internal organs. This possibility Mr. Marwood supports by statistics showing the salt consumption in various countries compared with the incidence of cancer among the inhabitants. Cancer, it appears, is almost unknown among the Eskimos, while the death rate is very high in the United Kingdom, the United States, and other countries. Mr. Marwood probably appreciates the trickiness of statistics, but as the proceeds of his chief work, *What is the Root Cause of Cancer?* go to the British Empire Cancer Campaign, no doubt that body will see that due note is made of Mr. Marwood's evidence.

HERBALISTS AND ACUTE APPENDICITIS.

DR. RICHARD E. M. TAUNTON (Hanwell, W.7) writes: In an advertising booklet I have recently received from a firm of "herb specialists," of which many thousands are distributed annually, is an article on "Appendicitis or Inflammation of the Vermiform Appendix." It commences by stating that "in the olden days appendicitis was known as inflammation of the bowels and the deaths from this cause were few. People knew exactly what to do, especially those who were subject to the complaint." It then goes on to say that "the remedy is very simple and it is one which certainly should be tried in every case before an operation is consented to." The symptom of pain in the right iliac fossa is described, and the article then continues as follows: "On the first appearance of these pains the patient, if an adult, should take a dessertspoonful of olive oil. Two hours afterwards another dessertspoonful should be taken. This is often sufficient, but it will be more speedily effective if half an hour after taking the first dose of olive oil a wineglassful of an infusion of elder flowers and peppermint is taken. At the same time it would greatly ease the pain if hot fomentations were frequently applied to the part. If the disease is attacked by these means at the commencement the appendicitis has usually entirely disappeared after twelve hours. It will readily be admitted that this treatment if successful—and this is generally the case—is far preferable to a long and tedious period spent in recovering from an operation." Such advertising literature as this must have no small bearing on the mortality from appendicitis, especially in the many cases in which there is a normal pulse and temperature and the pain is only slight, and yet on opening the abdomen within a very few hours of the commencement of the pain an acutely inflamed and suppurative appendix is found. Furthermore, it dissuades the patient from seeking advice at an early stage of the disease.

"SAFETY FIRST" IN PHOTOGRAPHY.

BURROUGHS WELLCOME AND CO. have issued a useful little book entitled *Safety First in Photography*. After a brief history of the development of photography there is a description of the Wellcome Photographic Exposure Calculator, remarks on rules for development with the aid of tabloid developers, and condensed tables of time and temperature for a number of well known developers. The use of tabloid desensitizers will, it is said, prevent the fogging of plates and films. After one minute's treatment in the dark in a solution of desensitizer, the plates or films can be developed by candle light. The book is illustrated with reproductions of photographs showing the effect of the use of tabloid products in developing, toning, and intensifying.

THE ART OF ADVERTISING HEALTH.

ADVERTISEMENT is, of course, a fine art, and there is no reason why it should not be employed in the cause of health. The Wesleyan and General Assurance Society of Birmingham has a Health Service Bureau, which issues leaflets with a view to inducing its policy holders to prolong their lives. Three, which have been issued recently, are entitled "The care of the teeth," "Rheumatism," and "Whooping-cough." The first is adorned with a picture of a crocodile having its teeth cleaned by small birds, and the title, "The crocodile lives 200 years; if you wish to enjoy long life, keep your mouth clean." The second leaflet announces "3,000,000 weeks of work lost annually to the insured population through rheumatism." After such headings the plain statement, "Whooping-cough," seems almost an anti-climax. The advice contained in the leaflets seems sound, and the necessity for consulting the doctor and dentist is duly emphasized. As pathology and pessimism are eschewed, the leaflets should be useful if read by those for whom they are intended. It is stated that 660 medical officers of health and 120 education authorities use the leaflets for distribution.

ERRATUM.

THERE is a regrettable printer's error in what is possibly the most important word in the notice of an appliance for bedridden patients with incontinence which has been devised by Messrs. W. B. Hilliard and Sons of Glasgow (BRITISH MEDICAL JOURNAL, June 19th, p. 1041). The word "piecer" in the sixth line should have been "piercer," which is descriptive of the principal novelty of the appliance—a rigid metal tube, which is made sharp-pointed so that it may easily pierce (perforate) a mattress.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, 46, 47, and 48 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears at page 50.